



PRODUCT: ACETONE (AC) REVISION: 9

DATED: 26/01/17

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## PRODUCT SPECIFICATION

|                         |                 |
|-------------------------|-----------------|
| Product Name            | Acetone N Grade |
| Alternative Name        |                 |
| Product Grade           | 2-propanone     |
| Specification Reference | AC/6 (02/10)    |

## SALES SPECIFICATION

| PROPERTY                             | UNITS                         | VALUE                       | TEST                 |
|--------------------------------------|-------------------------------|-----------------------------|----------------------|
| Acetone content                      | % mass                        | 99.5 min                    |                      |
| Density                              | kg/l @ 20°C                   | 0.790 min - 0.792 max       | D3505                |
| Water Content                        | % mass                        | 0.3 max                     | D1364                |
| Acidity                              | % mass as acetic acid (fixed) | 0.002 max                   | BS 509               |
| Appearance                           |                               | Clear colourless liquid     | Visual               |
| Non-Volatile Matter                  | %                             | 0.001 max                   | D1353                |
| Colour                               | Pt/Co Scale                   | 5 max                       | D1209                |
| Distillation range (Incl. Bp 56.2°C) | °C                            | 1 max                       | D1078                |
| Alcoholic impurities                 |                               | Complies with BS limit test | BS 509 (part 2):1984 |
| Alkalinity (calculated as Ammonia)   |                               | Complies with BS limit test | D1614                |
| Permanganate time                    | hours                         | 2 minimum                   | D1363                |

## PHYSICAL PROPERTIES

| PROPERTY                         | CONDITIONS       | UNIT                         | VALUE                    |
|----------------------------------|------------------|------------------------------|--------------------------|
| Molecular mass                   |                  |                              | 58.06                    |
| Density                          | 20°C             | kg/litre (vacuo)             | 0.790                    |
| Relative Density                 | 20°C/20°C        |                              | 0.7911                   |
| Coefficient of Cubical expansion | per °C           |                              | 1.487 x 10 <sup>-3</sup> |
| Change in Relative Density       | per °C           |                              | 1.14 x 10 <sup>-3</sup>  |
| Melting point                    |                  | °C                           | -94.7                    |
| Boiling point                    | 1.013 bar        | °C                           | 58.2                     |
| Change in boiling point          | 1013 bar         | °C/mbar                      | 0.0293                   |
| Vapour pressure                  | 20°C             | mbar                         | 247                      |
| Flammable limits                 |                  |                              |                          |
| Upper                            | 20°C             | % volume                     | 13.0                     |
| Lower                            | 20°C             | % volume                     | 2.6                      |
| Flash point                      | Abel closed cup  | °C                           | -18                      |
| Auto ignition temperature        |                  | °C                           | 465                      |
| Specific heat (liquid)           | 20°C             | kJ/kg°C                      | 2.18                     |
| Specific heat (vapour)           | 20°C             | kJ/kg°C                      | 1.28                     |
| Latent heat                      |                  |                              |                          |
| (of fusion)                      |                  | kJ/kg                        | 97.97                    |
| (of vaporisation)                | at boiling point | kJ/kg                        | 501.15                   |
| Heat of combustion               | 20°C             | Mj/kg                        | 30.86                    |
| Critical temperature             |                  | °C                           | 235.0                    |
| Critical pressure                |                  | bar                          | 47                       |
| Volume Resistivity               | 25°C             | ohm.m                        | 4.2 x 10 <sup>7</sup>    |
| Thermal Conductivity             | 20°C             | mW/m °C                      | 150                      |
| Dielectric constant              | 20°C             |                              | 21                       |
| Refractive index                 | 20°C             | n <sup>20</sup> <sub>D</sub> | 1.3591                   |
| Absolute viscosity               | 20°C             | cP                           | 0.322                    |
| Evaporation rate                 | 21.5°C           |                              | 18.11                    |
| Relative to n-BuAc = 1           |                  |                              |                          |



## NOTES

Tennants ACETONE complies with the following standards:

European Pharmacopoeia  
British Standard BS 509:1987  
American Standard ASTM D329-86  
German Standard DIN 53247

### **Exclusion of Liability**

Information contained in this publication is accurate to the best of the knowledge and belief of Tennants.

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### **Health and Safety**

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.



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## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

#### 1.1 Product Identifier

Trade Names Acetone  
CAS Number 67-64-1  
EINECS Number 200-662-2  
REACH Registration Number 01-2119471330-49-XXXX

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Besides its application as a solvent Acetone is an important intermediate of the chemical industry e.g. for manufacturing Methylmethacrylate, Methyl Isobutyl Ketone and Bisphenol A

Identified Uses:

##### Industrial use:

- 0 Generic exposure scenario (GES): Industrial Processes relevant for Acetone containing products (ES 1 - 11)
- 1 Manufacture, processing and distribution of substances and mixtures \*
- 2 Use in laboratories
- 3 Uses in coatings
- 4 Use in binders and release agents
- 5 Rubber production and processing
- 6 Polymer manufacturing
- 7 Polymer processing
- 8 Use in cleaning agents
- 9 Use in oil and gas field drilling and production operations
- 10 Blowing agents
- 11 Mining chemicals

Professional use:

- 12 Generic exposure scenario (GES): Professional Processes relevant for Acetone containing products (ES 13 - 22)
- 13 Use in laboratories
- 14 Uses in coatings
- 15 Use in binders and release agents
- 16 Polymer production
- 17 Polymer processing
- 18 Use in cleaning agents
- 19 Oil field well drilling and production operations
- 20 Agrochemical uses
- 21 De-icing and anti-icing applications
- 22 Explosives manufacture & use

Consumer use:

- 23 Generic exposure scenario (GES): Consumer uses of Acetone (ES 24 - 26)
- 24 Uses in coatings
- 25 Use in cleaning agents
- 26 De-icing and anti-icing applications

\* Examples for processing: use as an intermediate, use as a monomer etc., use as a solvent, use for the manufacturing of resins

#### 1.3 Details of the supplier of the safety data sheet

Tennants Distribution Limited  
Hazelbottom Road  
Cheetham  
Manchester  
M8 0GR  
Tel: 44(0)161 205 4454  
Fax: 44(0) 161 203 4298  
Email: [msds@tennantsdistribution.com](mailto:msds@tennantsdistribution.com)

#### 1.4 Emergency telephone number

Tel: 44(0)844 335 0001 (24 hours)



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## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### Regulation 1272/2008 (GHS)

Flam. Liq. 2; H225

Highly flammable liquid and vapour

Eye Irrit. 2; H319

Causes serious eye irritation

STOT SE 3; H336

May cause drowsiness or dizziness

(EUH066)

Repeated exposure may cause skin dryness or cracking

### 2.2 Label elements

#### Labelling (CLP)



#### Signal Word

Danger

#### Hazard Statements:

H225 Highly flammable liquid and vapour

H319 Causes serious eye irritation

H336 May cause drowsiness and dizziness

EUH066 Repeated exposure may cause skin dryness and cracking

#### Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces – no smoking

P243 Take precautionary measures against static discharge

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing

P403+P235 Store in a well ventilated place. Keep cool

P405 Store locked up

P501 Dispose of contents/container to hazardous or special waste collection point

### 2.3 Other hazards

Vapours are moderately irritating to the mucous membranes

Higher doses may have a narcotic effect. Danger of metabolic acidosis

After ingestion: Gastric and intestinal problems

Other symptoms: Headache, dizziness, nausea, unconsciousness

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Substances

#### Chemical characterisation

C<sub>3</sub> H<sub>6</sub> O = H<sub>3</sub>C-CO-CH<sub>3</sub>

Acetone, Dimethyl ketone, 2-Propanone, Methyl ketone

| CAS Number | EINECS Number | REACH registration number | RTECS No. | Customs Tariff No. |
|------------|---------------|---------------------------|-----------|--------------------|
| 67-64-1    | 200-662-2     | 01-2119471330-49-XXXX     | AL3150000 | 2914 11 00         |

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General Advice

Move victim to fresh air, put at rest and loosen restrictive clothing. Do not allow victim to become chilled. Keep victim warm

If victim is at risk of losing consciousness, position and transport on their side. Call a physician immediately

#### Inhalation

Move victim to fresh air, put at rest and loosen restrictive clothing.

If breathing becomes irregular or ceases, apply mouth to mouth resuscitation or artificial respiration immediately, where required supply oxygen. Immediately get medical attention

#### Skin contact

Immediately remove any wetted clothing, shoes or stockings. After contact with skin, wash immediately with soap and plenty of water. Then cream your skin. In case of skin irritation, consult a physician

#### Eye contact

Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently seek the immediate attention of an ophthalmologist

#### Ingestion

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

Give activated carbon, in order to reduce the resorption in the gastro-enteric tract



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**4.2 Most import symptoms and effects, both acute and delayed**

Burning eyes and skin. Fatigue, nausea, Headache, dizziness, unconsciousness.

**In case of inhalation:** For the development of any overt signs of toxicity in humans, accidental exposures to extremely large amounts of acetone by inhalation of vapour or ingestion of liquid are necessary (e. g. several thousand ppm of acetone vapour).

**In case of ingestion:** Gastric and intestinal problems.

**After contact with skin:** Irritant. Repeated exposure may cause skin dryness or cracking, due to defatting properties. No indication for sensitising properties in humans.

**After eye contact:** Causes serious eye irritation.

**4.3 Indication of any immediate medical attention and special treatment needed**

Combat acidosis. Monitor alkali reserves. Monitor breathing

If breathing becomes irregular or ceases, apply mouth to mouth resuscitation or artificial respiration immediately, where required supply oxygen

Attention: several hours latency period. In severe cases, pneumonia or a pulmonary oedema may develop

**5. FIRE FIGHTING MEASURES**

**5.1 Extinguishing Media**

Suitable extinguishing media: Extinguishing powder, alcohol resistant foam, carbon dioxide, water fog

Unsuitable extinguishing media: Full water jet

**5.2 Special hazards arising from the substance or mixture**

Highly flammable liquid and vapour. Explosive mixtures with air may even form at room temperature. Beware of reignition. In case of fire may be liberated: Carbon monoxide and carbon dioxide.

**5.3 Advice for fire-fighters**

**Special protective equipment for fire-fighters:** Wear a self contained breathing apparatus and chemical protective clothing

**Additional information**

Hazchem-Code: 2YE

Do not expose to high temperature. Danger of bursting or explosion. Use fine water spray to cool endangered containers

Move undamaged containers from immediate hazard area if it can be done safely. Do not allow fire water to penetrate into surface or ground water. Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities. Fire class: B

Mixtures with 4% acetone mixed with 96% water still have a flash point of 54°C

**6. ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

Eliminate all ignition sources if safe to do so. Remove persons not involved upwind. Wear a self-contained breathing apparatus and chemical protective clothing. Solvent-resistant protective clothing recommended.

**6.2 Environmental precautions**

Plug leaks if safely possible. Do not allow to enter drains, surface waters, basements or pits. When released into the environment, alert police and fire brigade. Seal all low level rooms. Danger of explosion!

**6.3 Methods and material for containment and cleaning up**

In case of spill of large quantities: Dam spills and pump to remove. Explosion protection required

Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal

**Flowing water:** Dilution occurs quickly. In case of large spills/leaks inform appropriate local, state and federal spill reporting authorities

**Standing water:** Seal off. Remove all sources of ignition

**Additional information:** Remove all sources of ignition. Vapours spread at floor level. Cover drainage holes and evacuate basement. Dilute with plenty of water. Use only explosion protected equipment/instruments

**Liquid:** Very highly flammable. Liquid evaporate very quickly

**Vapours:** Very highly flammable

Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may backflash over great distances when ignited. Ignition by hot surfaces, sparks and open flames

Solubility in water: Complete

Mixtures with 4% acetone mixed with 96% water still have a flash point of 54°C. In case of important spills, risk of ignition of the acetone-water mixture. Potentially explosive mixtures with air may form above water surface

**6.4 Reference to other sections**

Refer additionally to Section 8 and 13



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**7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

**Advice on safe handling**

Provide adequate ventilation, and local exhaust as needed.  
Provide room air exhaust at ground level. Concentrated vapours are heavier than air. Avoid the formation of aerosol.  
Do not breathe vapours. Avoid contact with skin and eyes. Wear protective equipment.  
Use only explosion-protected equipment/instruments. Do not use air pressure.

**Precautions against fire and explosion**

Exposure to temperatures exceeding 50°C will increase pressure: resulting in danger of bursting or explosion. Keep away from sources of ignition – No smoking. Take precautionary measures against static discharges. Beware of reignition. Potentially explosive mixture may form within partially empty containers. Emergency cooling must be provided for in case of a fire in the vicinity. Do not weld

**7.2 Conditions for safe storage, including any incompatibilities**

**Requirements for storerooms and containers**

Keep container dry. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight.  
Steel, stainless steel, and aluminium are stable container materials. Copper may be attacked.  
Unsuitable container/equipment material: May attack plastics.  
Make sure spills can be contained, e.g. in sump pallets or kerbed areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.

**Hints on joint storage**

Do not store together with combustible or self-igniting materials or any highly flammable solids. Peroxides may form when product is exposed to light and air

**Further details**

Potentially explosive mixture may form within partially empty containers. For outdoor storage: Use only equipment approved for use in 1 zone. For indoor storage: Use only equipment approved for use in 2 zone  
Storage class: 3 = Flammable liquids

**7.3 Specific end use(s)**

Solvent

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

| Type                    | Limit Value                            |
|-------------------------|----------------------------------------|
| Europe, IOELV: TWA      | 1210 mg/m <sup>3</sup> ; 500 ppm       |
| Great Britain: WEL-TWA  | 1210 mg/m <sup>3</sup> ; 500 ppm       |
| Great Britain: WEL-STEL | 3620 mg/m <sup>3</sup> ; 1500 ppm      |
| Ireland: 8 hours        | 1210 mg/m <sup>3</sup> ; 500 ppm IOELV |

Contains no substances with occupational exposure limits

**DN(M)EL/PNEC**

**DN(M)EL's**

| End User  | Exposure Time | Route of entry | Value                  |
|-----------|---------------|----------------|------------------------|
| Workers   | Long term     | Dermal         | 186 mg/kg bw/d         |
| Workers   | Short term    | Inhalative     | 2420 mg/m <sup>3</sup> |
| Workers   | Long term     | Inhalative     | 1210 mg/m <sup>3</sup> |
| Consumers | Long term     | Oral           | 62 mg/kg bw/d          |
| Consumers | Long term     | Dermal         | 62 mg/kg bw/d          |
| Consumers | Long term     | Inhalative     | 200 mg/m <sup>3</sup>  |

**Predicted No Effect Concentrations (PNEC):**

PNEC water (freshwater) = 10.6 mg/l  
PNEC water (marine water) = 1.06 mg/l  
PNEC water (intermittent release) = 21 mg/l  
PNEC sediment(freshwater) = 30.4 mg/kg dwt  
PNEC sediment (marine water) = 3.04 mg/kg dwt  
PNEC soil = 33.3 mg/kg dwt  
PNEC sewage treatment plant = 100 mg/l

**8.2 Exposure controls**

Explosion protection required. Provide good ventilation and/or an exhaust system in the work area

**Occupational exposure controls**

All information for relevant exposure scenarios including operation conditions and risk management measures are listed in 'Annex II: Worker Exposure and Risk Assessment'

**Respiratory protection**

Use filter type AX (= against vapours of low boiling organic substances) according to EN 14387. Have a breathing



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apparatus that is not dependent on the circulating air ready for emergencies.

**Hand protection**

Protective gloves according to EN 374

**Gloves material**

Butyl caoutchouc (butyl rubber) – Layer thickness  $\geq 0.5$ mm. Breakthrough time:  $>480$  min

Observe glove manufacturer's instructions concerning penetrability and breakthrough time

**Eye protection**

Tightly sealed safety glasses according to EN 166

**Skin protection**

Use solvent resistant protective clothing

Recommendation: Flame retardant protective clothing, anti-static safety shoes according to EN 345-347

**General protection and hygiene measures**

Keep away from heat sources, sparks and open flames. Take precautionary measures against static discharges.

Avoid contact with skin and eyes. When using do not eat, drink or smoke. Wash hands before breaks and after work.

Have eye wash bottle or eye rinse ready at work place.

Alternatives to the personal protective measures as mentioned can only be determined in agreement with a responsible safety expert.

**Consumer exposure controls**

All information for relevant exposure scenarios including operational conditions and risk management measures are listed in 'Annex II: consumer exposure and risk assessment'.

**Environmental exposure controls**

All information for relevant exposure scenarios including operational conditions and risk management measures are listed in 'Annex III: Environmental Exposure and Risk Assessment and Annex IV: Environmental Exposure Calculation Tool'.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

|                                       |                                                           |
|---------------------------------------|-----------------------------------------------------------|
| Appearance                            | Liquid                                                    |
| Colour                                | Colourless, clear                                         |
| Odour                                 | Sweet aromatic                                            |
| pH in water solution                  | at 10 g/l: neutral' 50% in H <sub>2</sub> O: 5 - 6        |
| Boiling point/boiling range           | 56.05°C                                                   |
| Melting point/melting range           | -94.7°C                                                   |
| Flash point                           | -17°C (c.c.)                                              |
| Evaporation rate                      | No data available                                         |
| Flammability                          | Highly flammable liquid and vapour                        |
| Lower explosion limit                 | 2.50 vol %                                                |
| Upper explosion limit                 | 14.30 vol %                                               |
| Vapour pressure                       | At 20°C: 240 hPa<br>At 50°C: 800 hPa                      |
| Density                               | at 20°C: 0.79 g/ml                                        |
| Solubility                            | at 20°C: in organic solvents 100%                         |
| Water solubility                      | at 20°C: multimiscible                                    |
| Partition coefficient n-octanol/water | -0.24 log P(o/w)                                          |
|                                       | Bio-accumulation is not to be expected (log P(o/w) $<1$ ) |
| Auto-ignition temperature             | 465°C (Inflammation group G1)                             |
| Thermal decomposition                 | None                                                      |
| Viscosity, dynamic                    | At 20°C: 0.32 mPa*s                                       |
| Explosive properties                  | Explosion category 1; Explosion group II A                |
| Oxidising characteristics             | Highly flammable liquid and vapour                        |

**9.2 Other information**

|                                  |                               |
|----------------------------------|-------------------------------|
| Ignition temperature             | 465°C (Inflammation group G1) |
| Refractive index                 | At 20°C: 1.358 – 1.359        |
| Additional information           | Molar mass: 58.09 g/mol       |
| Dissociation constant            | 24.2 pKa at 25°C              |
| Evaporation rate                 | 2.0 (ether = 1)               |
| Evaporation rate                 | 5.6 (BuAc = 1)                |
| Saturation concentration at 20°C | 550 g/m <sup>3</sup>          |



## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Acetone reacts in presence of bases. Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may backflash over great distances when ignited. May become electrostatically charged.

### 10.2 Chemical stability

Product is stable under normal storage conditions.

### 10.3 Possibility of hazardous reactions

No hazardous reactions known.

### 10.4 Conditions to avoid

Highly flammable. Concentrated vapours are heavier than air. Take precautionary measures against static discharges. Forms explosive mixtures with air, also in empty, uncleaned containers. May produce, when being mixed with chloridised hydrocarbons and exposed to light, strongly irritating chloric acetone.

### 10.5 Incompatible materials

Attacks many plastics and rubbers. On contact with barium hydroxide, sodium hydroxide and many other alkaline materials condensation may occur. Avoid contact with strong oxidizing agents, alkalis and amines.

### 10.6 Hazardous decomposition products

In case of fire may be liberated: Carbon monoxide and carbon dioxide

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute Oral Toxicity

LD50 Rat 5800 mg/kg bw (OECD 401)

#### Acute Dermal Toxicity

LD50 Rat >15800 mg/kg bw

#### Acute Inhalative Toxicity

LC50 Rat 76 mg/L/4h

#### Toxicological effects

Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Based on available data, the classification criteria are not met. Specific symptoms in animal studies (guinea pig): Does not cause irritation.

Eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation. Specific symptoms in animal studies (Rabbit): irritant (OECD 405)

Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.

Skin sensitisation: Based on available data, the classification criteria are not met.

Sensitisation: Specific symptoms in animal studies (guinea pig): not sensitising (OECD 406)

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

Not mutagenic in bacterial mutagenicity (OECD 471) Chromosomal aberrations, in-vitro (OECD 473): negative  
Gene-mutations mammalian cells, in-vitro (OECD 476): negative

Micronucleus test in-vivo mouse/hamster (non-Guideline): negative

Carcinogenicity: Based on available data, the classification criteria are not met. Not carcinogen at long term exposure (mouse, dermal).

Reproductive toxicity: Based on available data, the classification criteria are not met. Effects on fertility: No impairment of reproductive performance in animal experiments.

Developmental toxicity: None developmental toxicity (inhalation at Rat, Mouse, OECD 414).

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H336 = May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.

NOAEL Rat, oral: 900 mg/kg/90d bw/d. NOAEC Rat, inhalative: 22500 mg/m<sup>3</sup>/8w

Aspiration hazard: Based on available data, the classification criteria are not met.

#### Other information

Short term effect: 10000 ppm were well-tolerated. No symptoms did appear after 30 to 60 minutes.

#### Symptoms

Burning eyes and skin. Fatigue, nausea, Headache, dizziness, unconsciousness.

In case of inhalation: For the development of any overt signs of toxicity in humans, accidental exposures to extremely large amounts of acetone by inhalation of vapour or ingestion of liquid are necessary (e. g. several thousand ppm of acetone vapour).

In case of ingestion: Gastric and intestinal problems.

After contact with skin: Irritant. Repeated exposure may cause skin dryness or cracking, due to defatting properties.



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No indication for sensitising properties in humans.

After eye contact: Causes serious eye irritation.

## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

#### **Aquatic toxicity - Acute effects**

##### **Fish toxicity:**

Freshwater species: 96h LC50 (Oncorhynchus mykiss): 5540 mg/l

Marine species: 96h LC50 (Alburnus alburnus (aburnum)): 11000 mg/l

##### **Invertebrate toxicity:**

Freshwater species: 48h EC50 (Daphnia pulex (water flea)): 8800 mg/l

Marine species: 24h EC50 (Artemisia salina): 2100 mg/l

##### **Algae toxicity:**

Freshwater species: 8h NOEC (Microcystis aeruginosa): 530 mg/l/8 d

Marine species: 96h NOEC (Prorocentrum minimum): 430 mg/l

##### **Bacterial toxicity:**

EC12: (30 min activated sludge; OECD 209): 1000 mg/l

##### **Long term effects**

##### **Long term toxicity to aquatic invertebrates:**

28 day NOEC (Daphnia pulex (water flea); reproduction: 2212 mg/l

No information on longer term effects of fish and algae available

Long term effects on aquatic organisms are not relevant due to the rapid elimination in water

### **12.2 Persistence and degradability**

#### **Further details**

##### **Abiotic degradation:**

DT50, 19-114 d (Air, indirect photodegradation by reaction with OH radicals)

Abiotic degradation: none (Water, hydrolysis)

##### **Biodegradation:**

91%/28d (OECD 301B)

ThOD 84%/5d (BOD5, APHA 219)

COD: 2.21 gO<sub>2</sub>/g

Product is readily biodegradable

Effects on sewage plant:

In activated sludge: 100%/4d (anaerobic conditions; Warburg Respirometer)

### **12.3 Bio accumulative potential**

Bioconcentration factor (BCF): 3 (calculated, BCFWIN v2.17)

### **12.4 Mobility in soil**

Adsorption coefficient soil (Kd): 1.5 L/kg at 20°C

The soil sorption coefficient indicates that acetone is mobile in soil and may be transported by soil water

Volatility:

Henry constant: 2.929 – 3.070 Pa·m<sup>3</sup>/mol (25°C in water)

Henry constant: 3.311 Pa·m<sup>3</sup>/mol (25°C marine water)

Experimentally determined Henry's Law constants indicate a moderate volatility from water

### **12.5 Results of PBT and vPvB assessment**

This substance does not meet the PBHT/vPvB criteria of REACH, annex XIII

### **12.6 Other adverse effects**

#### **General information**

##### **Terrestrial toxicity:**

48h LD50 (Eisenia fetida): 0.1 – 1 mg/cm<sup>3</sup>

48h LD50 (Ambystoma mexicanum): 20000 mg/l

48h LD50 (Xenopus laevis): 24000 mg/l

In a study conducted according to OECD Guideline 207 (Earthworm, Acute Toxicity Tests: filter paper contact test), acetone showed a moderate toxicity to Eisenia fetida. In further short term toxicity studies, Ambystoma mexicanum and Xenopus laevis larvae exposed to acetone under static conditions in covered glass basins showed 48h LC50 values of 20,000 mg/l and 24,000 mg/l respectively

Do not allow to enter into ground water, surface water or drains

## **13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

#### **Product**

Waste key number: 070104\* =

Wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals: organic solvents, halogen free. \* = Evidence for disposal must be provided



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**Recommendation**

Incinerate as hazardous waste according to applicable local, state, and federal regulations. Do not dispose of with household waste

**Contaminated packaging**

**Recommendation**

Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled

**14. TRANSPORT INFORMATION**

**14.1 UN Number**

**ADR**

1090

**IMDG**

1090

**IATA**

1090

**14.2 Proper Shipping Name**

**ADR**

UN 1090, ACETONE

**IMDG**

ACETONE

**IATA**

ACETONE



**14.3 Transport hazard class**

**ADR**

Class 3, Code: F1

**IMDG**

Class 3, Sub risk -

**IATA**

Class 3

**14.4 Packing group**

**ADR**

II

**IMDG**

II

**IATA**

II

**14.5 Environmental**

Marine pollutant

No

**14.6 Special precautions for users**

**Land transport (ADR/RID)**

Warning board

ADR/RID: Kemler number 33, UN number 1090

Hazard label

3

Limited quantities

1L

EQ

E2

Contaminated packaging: Instructions

P001 IBC 02 R001

Special provisions for packing together

MP19

Portable tanks: Instructions

T4

Portable tanks: Special instructions

TP1

Tank coding:

LGBF

Tunnel restriction code:

D/E

**Sea Transport (IMDG)**

EmS:

F-E, S-D

Special provisions

-

Limited quantities

1L

EQ

E2

Contaminated packaging: Instructions

P001

Contaminated packaging: Provisions

-

IBC: Instructions

IBC02

IBC: Provisions

-

Tank instructions: IMO

-

Tank instructions: UN

T4

Tank instructions: Provisions

TP1

Stowage and segregation

Category E

**Air Transport (IATA)**

Hazard

Flamm. Liquid

EQ

E2

Passenger Ltd Qty

Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L

Passenger

Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L

Cargo

Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L



**PRODUCT: ACETONE (AC) REVISION: 9**

**DATED: 26/01/17**

**PAGE 11 OF 11**

|                                                                                                            |    |
|------------------------------------------------------------------------------------------------------------|----|
| ERG                                                                                                        | 3H |
| <b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>                       |    |
| Pollution category: Z                                                                                      |    |
| Vessel type: -                                                                                             |    |
| Product name: Acetone                                                                                      |    |
| <b>15. REGULATORY INFORMATION</b>                                                                          |    |
| <b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture</b> |    |
| <b>National regulations – Great Britain</b>                                                                |    |
| Hazchem-Code: •2YE                                                                                         |    |
| No data available                                                                                          |    |
| <b>National regulations - EC member states</b>                                                             |    |
| Volatile organic compounds (VOC): 100 % by weight = 790 g/l                                                |    |
| <b>15.2 Chemical safety assessment</b>                                                                     |    |
| For this substance a chemical safety assessment has been carried out                                       |    |
| <b>16. OTHER INFORMATION</b>                                                                               |    |
| Further remarks                                                                                            |    |
| Literature: REACH Registration Dossier Acetone. P & D-REACH Consortium, 2010                               |    |
| <b>Source of key data used to compile the data sheet</b>                                                   |    |
| Supplier information                                                                                       |    |
| <b>Modifications from last revision</b>                                                                    |    |
| The Safety Data Sheet has been revised throughout in accordance with current requirements                  |    |
| <b>Date: 26/01/17</b>                                                                                      |    |
| <b>Copyright© Tennants Distribution Limited (2017)</b>                                                     |    |

## Exposure scenario 0: Generic exposure scenario (GES): Industrial Processes relevant for Acetone containing products (ES 1 - 11)

### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Generic exposure scenario, applies to all contributing exposure scenarios related to exposure scenario 1 - 11: industrial uses

- ES1 - Manufacture, processing and distribution of substances and mixtures
- ES2 - Use in laboratories
- ES3 - Uses in coatings
- ES4 - Use in binders and release agents
- ES5 - Rubber production and processing
- ES6 - Polymer manufacturing
- ES7 - Polymer processing
- ES8 - Use in cleaning agents
- ES9 - Use in oil and gas field drilling and production operations
- ES10 - Blowing agents
- ES11 - Mining chemicals

|                         |    |                                                                                                                                                                         |         |
|-------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1  | Use in closed process, no likelihood of exposure<br>General exposures (closed systems) (worker)                                                                         | Page 15 |
|                         | 2  | Use in closed, continuous process with occasional controlled exposure<br>General exposures (closed systems) (worker)                                                    | Page 15 |
|                         | 3  | Use in closed batch process (synthesis or formulation)<br>General exposures (closed systems) (worker)                                                                   | Page 16 |
|                         | 4  | Use in batch and other process (synthesis) where opportunity for exposure arises<br>Process sampling (open systems) (worker)                                            | Page 16 |
|                         | 5  | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)<br>Mixing operations (open systems) (worker) | Page 17 |
|                         | 6  | Calendering operations<br>Calendering (including Banburys) (worker)                                                                                                     | Page 17 |
|                         | 7  | Industrial spraying<br>Spraying/fogging by machine application (worker)                                                                                                 | Page 18 |
|                         | 8  | Industrial spraying<br>Spraying/fogging by machine application (worker)                                                                                                 | Page 18 |
|                         | 9  | Industrial spraying<br>Spraying/fogging by machine application (worker)                                                                                                 | Page 18 |
|                         | 10 | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>Bulk transfers (worker)                     | Page 19 |
|                         | 11 | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities<br>Bulk transfers (worker)                         | Page 19 |
|                         | 12 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>Small package filling (worker)                               | Page 20 |
|                         | 13 | Roller application or brushing<br>Rolling, Brushing (worker)                                                                                                            | Page 20 |
|                         | 14 | Roller application or brushing<br>Equipment cleaning and maintenance (worker)                                                                                           | Page 21 |

---

|                         |    |                                                                                                                |         |
|-------------------------|----|----------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 15 | Use of blow agents in manufacture of foam<br>Foaming (worker)                                                  | Page 21 |
|                         | 16 | Treatment of articles by dipping and pouring<br>Dipping, immersion and pouring (worker)                        | Page 22 |
|                         | 17 | Production of preparations or articles by tableting, compression,<br>extrusion, pelletisation (worker)         | Page 22 |
|                         | 18 | Use in laboratory reagents (small scale)<br>Laboratory activities (worker)                                     | Page 23 |
|                         | 19 | Hand-mixing with intimate contact and only PPE available<br>Hand application - Finger paints, pastels (worker) | Page 23 |

---

Contributing exposure scenario 1

### **Use in closed process, no likelihood of exposure General exposures (closed systems) (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 0.01 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.002

inhalative: 0.00002

dermal: 0.002

all relevant routes: 0.002

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

(closed systems); Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 2

### **Use in closed, continuous process with occasional controlled exposure General exposures (closed systems) (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 50 ppm

dermal: 1.37 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.11

inhalative: 0.10

dermal: 0.01

all relevant routes: 0.11

---

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

Continuous process, Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 3

### **Use in closed batch process (synthesis or formulation)**

#### **General exposures (closed systems) (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.2

inhalative: 0.20

dermal: 0.002

all relevant routes: 0.20

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

Batch process, Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 4

### **Use in batch and other process (synthesis) where opportunity for exposure arises**

#### **Process sampling (open systems) (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm

dermal: 6.86 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.24

inhalative: 0.20

dermal: 0.04

all relevant routes: 0.24

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 5

**Mixing or blending in batch processes for formulation of preparations and articles  
(multistage and/or significant contact)**

**Mixing operations (open systems) (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

**Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 13.71 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.57

inhalative: 0.50

dermal: 0.07

all relevant routes: 0.57

**Risk management measures**

Operational conditions and risk management measures:

Batch process, Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 6

**Calendering operations**

**Calendering (including Banburys) (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC6: Calendering operations

**Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 27.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.65

inhalative: 0.50

dermal: 0.15

all relevant routes: 0.65

**Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 7

## **Industrial spraying**

### **Spraying/fogging by machine application (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC7: Industrial spraying

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 25 ppm (with local exhaust ventilation, efficiency of 95%)

dermal: 2.14 mg/kg/d (with local exhaust ventilation, efficiency of 95%)

Risk characterisation ratio (RCR):

RCR: 0.06

inhalative: 0.05

dermal: 0.01

all relevant routes: 0.06

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation.

Operational conditions and risk management measures:

with local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 8

## **Industrial spraying**

### **Spraying/fogging by machine application (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC7: Industrial spraying

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 350 ppm (dilution ventilation effectiveness 30 %)

dermal: 42.86 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.93

inhalative: 0.70

dermal: 0.23

all relevant routes: 0.93

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Ensure operation is undertaken outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 9

## **Industrial spraying**

### **Spraying/fogging by machine application (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC7: Industrial spraying

---

---

### Exposure prediction

Exposure estimation and reference to its source:

inhalative: 50 ppm (Respiratory protective device, efficiency of 90%)  
dermal: 42.86 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.33  
inhalative: 0.10  
dermal: 0.23  
all relevant routes: 0.33

### Risk management measures

Conditions and measures related to personal protection, hygiene and health evaluation:

Wear a respirator conforming to EN140 with Type A filter or better.

---

Contributing exposure scenario 10

### Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

#### Bulk transfers (worker)

#### List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

### Exposure prediction

Exposure estimation and reference to its source:

inhalative: 250 ppm  
dermal: 13.71 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.57  
inhalative: 0.50  
dermal: 0.07  
all relevant routes: 0.57

### Risk management measures

Operational conditions and risk management measures:

Non-dedicated facility, transfer from/pouring from containers

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 11

### Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

#### Bulk transfers (worker)

#### List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

---

---

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 150 ppm  
dermal: 6.86 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.34  
inhalative: 0.30  
dermal: 0.037  
all relevant routes: 0.34

## Risk management measures

Operational conditions and risk management measures:

Dedicated facility, transfer from/pouring from containers

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 12

## Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

### Small package filling (worker)

#### List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 200 ppm  
dermal: 6.86 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.44  
inhalative: 0.40  
dermal: 0.04  
all relevant routes: 0.44

## Risk management measures

Operational conditions and risk management measures:

Dedicated facility, pouring from small containers

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 13

## Roller application or brushing

### Rolling, Brushing (worker)

#### List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

---

---

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 27.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.65

inhalative: 0.50

dermal: 0.15

all relevant routes: 0.65

## Risk management measures

Operational conditions and risk management measures:

Or: Equipment cleaning and maintenance

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 14

## Roller application or brushing

### Equipment cleaning and maintenance (worker)

#### List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 27.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.65

inhalative: 0.50

dermal: 0.15

all relevant routes: 0.65

## Risk management measures

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 15

## Use of blow agents in manufacture of foam

### Foaming (worker)

#### List of use descriptors

Process categories [PROC]:

PROC12: Use of blowing agents in manufacture of foam

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 100 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.2

inhalative: 0.20

dermal: 0.00

all relevant routes: 0.20

---

### **Risk management measures**

Operational conditions and risk management measures:

Production of foam-based objects

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 16

### **Treatment of articles by dipping and pouring Dipping, immersion and pouring (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 13.71 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.57

inhalative: 0.50

dermal: 0.074

all relevant routes: 0.57

#### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 17

### **Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 50 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.1

inhalative: 0.10

dermal: 0.00

all relevant routes: 0.10

#### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

---

Contributing exposure scenario 18

### **Use in laboratory reagents (small scale)**

#### **Laboratory activities (worker)**

##### **List of use descriptors**

Process categories [PROC]:

PROC15: Use as laboratory reagent

##### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 50 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.1

inhalative: 0.10

dermal: 0.00

all relevant routes: 0.10

##### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 19

### **Hand-mixing with intimate contact and only PPE available**

#### **Hand application - Finger paints, pastels (worker)**

##### **List of use descriptors**

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

##### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 28.29 mg/kg/d (Gloves, efficiency of 80%)

Risk characterisation ratio (RCR):

RCR: 0.65

inhalative: 0.50

dermal: 0.15

all relevant routes: 0.65

##### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Wear suitable gloves tested to EN374.

---

### **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

---

|                                                                                                             |
|-------------------------------------------------------------------------------------------------------------|
| <b>Exposure scenario 1:</b><br><b>Manufacture, processing and distribution of substances and mixtures *</b> |
|-------------------------------------------------------------------------------------------------------------|

**List of use descriptors**

Sector of uses [SU]: SU3: Industrial uses

**Application**

Activities and processes: Manufacture, Processing, Composition, Distribution.

Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

\* Examples for processing:

use as an intermediate,

use as a monomer etc.,

use as a solvent,

use for the manufacturing of resins

Remark:

Process categories [PROC]

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15

Control of worker exposure:

See section risk management measures

Human Health, Worker exposure and risk assessment:

Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:

<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:

ERC1, ERC2, ERC4, ERC6a

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol &amp; Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                                                                         |         |
|-------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 1: Manufacture, processing and distribution of substances and mixtures (environment) | Page 25 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 1: Manufacture, processing and distribution of substances and mixtures (worker)      | Page 26 |

---

Contributing exposure scenario 1

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 1:  
Manufacture, processing and distribution of substances and mixtures (environment)**

## List of use descriptors

Environmental release categories [ERC]:

ERC1: Manufacture of substances

ERC2: Formulation of preparations

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

## Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

## Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.

Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.

Typical technical measures are closed systems or scrubbers or charcoal adsorbers.

Treat air emission to provide a typical removal efficiency of (%): 90

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 1:  
Manufacture, processing and distribution of substances and mixtures (worker)**

## List of use descriptors

Process categories [PROC]:

- PROC1: Use in closed process, no likelihood of exposure
- PROC2: Use in closed, continuous process with occasional controlled exposure
- PROC3: Use in closed batch process (synthesis or formulation)
- PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
- PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
- PROC6: Calendering operations
- PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
- PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
- PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- PROC10: Roller application or brushing
- PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
- PROC15: Use as laboratory reagent

## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently).

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently).

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

---

**Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

---

## Exposure scenario 2: Use in laboratories

---

### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: use of the substance within laboratory settings, including material transfers and equipment cleaning

Remark: Process categories [PROC]  
PROC10, PROC15  
Process Categories (additionally): PROC19  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC4

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                         |         |
|-------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 2: Use in laboratories (environment) | Page 28 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 2: Use in laboratories (worker)      | Page 29 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 2: Use in laboratories (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

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Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.

Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.

Typical technical measures are closed systems or scrubbers or charcoal adsorbers.

Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 2: Use in laboratories (worker)**

### List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE available

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

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## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 3: Uses in coatings

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### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Covers the use in coatings (paints, inks, adhesives, etc), including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation).

Remark: Process categories [PROC]  
PROC5, PROC8a, PROC8b, PROC10, PROC13  
Process Categories (additionally):  
PROC1, PROC2, PROC3, PROC4, PROC7, PROC8b, PROC9, PROC15, PROC19  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC4

Environment, ECT acetone:  
Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                      |         |
|-------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 3: Uses in coatings (environment) | Page 31 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 3: Uses in coatings (worker)      | Page 32 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 3: Uses in coatings (environment)**

### List of use descriptors

Environmental release categories [ERC]:  
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable  
Amounts used:  
Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

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Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 3: Uses in coatings (worker)**

### List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC10: Roller application or brushing  
PROC13: Treatment of articles by dipping and pouring  
PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC7: Industrial spraying  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
PROC15: Use as laboratory reagent  
PROC19: Hand-mixing with intimate contact and only PPE available

### Operational conditions

Duration and frequency of use:

Covers daily exposures up to 8h

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## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 4: Use in binders and release agents

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### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting and handling of waste

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC5

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                                       |         |
|-------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 4: Use in binders and release agents (environment) | Page 34 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 4: Use in binders and release agents (worker)      | Page 35 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 4: Use in binders and release agents (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC5: Industrial use resulting in inclusion into or onto a matrix

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

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Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 4: Use in binders and release agents (worker)**

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC6: Calendering operations  
PROC7: Industrial spraying  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
PROC10: Roller application or brushing  
PROC13: Treatment of articles by dipping and pouring

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

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## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 5: Rubber production and processing

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### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC6d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                                      |         |
|-------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 5: Rubber production and processing (environment) | Page 37 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 5: Rubber production and processing (worker)      | Page 38 |

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Contributing exposure scenario 1

### General information

#### Applies to all contributing exposure scenarios related to exposure scenario 5: Rubber production and processing (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

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Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.

Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.

Typical technical measures are closed systems or scrubbers or charcoal adsorbers.

Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 5: Rubber production and processing (worker)**

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC6: Calendering operations

PROC7: Industrial spraying

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

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Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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### **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 6: Polymer manufacturing

### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Manufacturing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC6d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                           |         |
|-------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 6: Polymer manufacturing (environment) | Page 40 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 6: Polymer manufacturing (worker)      | Page 41 |

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Contributing exposure scenario 1

### General information

### Applies to all contributing exposure scenarios related to exposure scenario 6: Polymer manufacturing (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

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Other relevant operational conditions:

Indoor/Outdoor use

## Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.

Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.

Typical technical measures are closed systems or scrubbers or charcoal adsorbers.

Treat air emission to provide a typical removal efficiency of (%): 90 %

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 6: Polymer manufacturing (worker)**

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC6: Calendering operations

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

PROC15: Use as laboratory reagent

## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

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Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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### **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 7: Polymer processing

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### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Processing of formulated polymers including incidental exposures during material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC6d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                        |         |
|-------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 7: Polymer processing (environment) | Page 43 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 7: Polymer processing (worker)      | Page 44 |

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Contributing exposure scenario 1

### General information

### Applies to all contributing exposure scenarios related to exposure scenario 7: Polymer processing (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

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---

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 7: Polymer processing (worker)**

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC6: Calendering operations  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
PROC10: Roller application or brushing  
PROC13: Treatment of articles by dipping and pouring  
PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation  
PROC15: Use as laboratory reagent

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

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Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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### **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 8: Use in cleaning agents

### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand) related equipment cleaning and maintenance

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC19  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC4d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                            |         |
|-------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 9: Use in cleaning agents (environment) | Page 46 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 9: Use in cleaning agents (worker)      | Page 47 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 9: Use in cleaning agents (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

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---

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 9: Use in cleaning agents (worker)**

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC7: Industrial spraying  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
PROC10: Roller application or brushing  
PROC13: Treatment of articles by dipping and pouring  
PROC19: Hand-mixing with intimate contact and only PPE available

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

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Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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### **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 9: Use in oil and gas field drilling and production operations

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### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b

Control of worker exposure:  
See section risk management measures

Human Health, Worker exposure and risk assessment:

Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC4

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                                                                  |         |
|-------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 10: Use in oil and gas field drilling and production operations (environment) | Page 49 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 10: Use in oil and gas field drilling and production operations (worker)      | Page 50 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 10: Use in oil and gas field drilling and production operations (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

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Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 10: Use in oil and gas field drilling and production operations (worker)**

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

### Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

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## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 10: Blowing agents

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### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Use as a blowing agent for rigid and flexible foams, including material transfers, mixing and injection, curing, cutting, storage and packing.

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC8b, PROC9, PROC12  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC4 (ERC10a)

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                     |         |
|-------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 11: Blowing agents (environment) | Page 52 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 11: Blowing agents (worker)      | Page 53 |

---

Contributing exposure scenario 1

### General information

### Applies to all contributing exposure scenarios related to exposure scenario 11: Blowing agents (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

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Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.

Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.

Typical technical measures are closed systems or scrubbers or charcoal adsorbers.

Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 11: Blowing agents (worker)**

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC12: Use of blowing agents in manufacture of foam

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

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## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 11: Mining chemicals

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### List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

### Application

Activities and processes: Covers the use of the substance in extraction processes at mining operations, including material transfers, winning and separation activities, and substance recovery and disposal

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9

Control of worker exposure:

See section risk management measures

Human Health, Worker exposure and risk assessment:

Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC8d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                       |         |
|-------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 12: Mining chemicals (environment) | Page 55 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 12: Mining chemicals (worker)      | Page 56 |

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Contributing exposure scenario 1

### General information

### Applies to all contributing exposure scenarios related to exposure scenario 12: Mining chemicals (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC8d: wide dispersive outdoor use of processing aids in open systems

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

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## Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 12: Mining chemicals (worker)**

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

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## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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|                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Exposure scenario 12:</b><br><b>Generic exposure scenario (GES): Professional Processes relevant</b><br><b>for Acetone containing products (ES 13 - 22)</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|

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**List of use descriptors**

Sector of uses [SU]: SU22: Professional uses

**Application**

Activities and processes: Generic exposure scenario, applies to all contributing exposure scenarios related to exposure scenario 13 - 22 (professional uses):

- ES13 - Use in laboratories
- ES14 - Uses in coatings
- ES15 - Use in binders and release agents
- ES16 - Polymer manufacturing
- ES17 - Polymer processing
- ES18 - Use in cleaning agents
- ES19 - Use in oil and gas field drilling and production operations
- ES20 - Agrochemical uses
- ES21 - De-icing and anti-icing applications
- ES22 - Explosives manufacture & use

|                         |    |                                                                                                                                                                         |         |
|-------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1  | Use in closed process, no likelihood of exposure<br>General exposures (closed systems) (worker)                                                                         | Page 59 |
|                         | 2  | Use in closed, continuous process with occasional controlled exposure<br>General exposures (closed systems) (worker)                                                    | Page 60 |
|                         | 3  | Use in closed batch process (synthesis or formulation)<br>General exposures (closed systems) (worker)                                                                   | Page 60 |
|                         | 4  | Use in batch and other process (synthesis) where opportunity for exposure arises<br>Process sampling (open systems) (worker)                                            | Page 61 |
|                         | 5  | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)<br>Mixing operations (open systems) (worker) | Page 61 |
|                         | 6  | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)<br>Mixing operations (open systems) (worker) | Page 62 |
|                         | 7  | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)<br>Mixing operations (open systems) (worker) | Page 62 |
|                         | 8  | Calendering operations<br>Calendering (including Banburys); with local exhaust ventilation (worker)                                                                     | Page 63 |
|                         | 9  | Calendering operations<br>Calendering (including Banburys) (worker)                                                                                                     | Page 63 |
|                         | 10 | Calendering operations<br>Calendering (including Banburys) (worker)                                                                                                     | Page 64 |
|                         | 11 | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>Bulk transfers (worker)                     | Page 64 |
|                         | 12 | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>Bulk transfers (worker)                     | Page 65 |
|                         | 13 | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>Bulk transfers (worker)                     | Page 66 |

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|                         |    |                                                                                                                                                 |         |
|-------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 14 | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities<br>Bulk transfers (worker) | Page 66 |
|                         | 15 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>Small package filling (worker)       | Page 67 |
|                         | 16 | Roller application or brushing<br>Equipment cleaning and maintenance (worker)                                                                   | Page 67 |
|                         | 17 | Roller application or brushing<br>Equipment cleaning and maintenance (worker)                                                                   | Page 68 |
|                         | 18 | Roller application or brushing<br>Equipment cleaning and maintenance (worker)                                                                   | Page 68 |
|                         | 19 | Non industrial spraying<br>Spraying/fogging by manual application (worker)                                                                      | Page 69 |
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---

Contributing exposure scenario 1

## Use in closed process, no likelihood of exposure

### General exposures (closed systems) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

#### Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0.01 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.002

inhalative: 0.00002

dermal: 0.002

all relevant routes: 0.002

---

---

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

(closed systems); Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 2

## Use in closed, continuous process with occasional controlled exposure

### General exposures (closed systems) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

#### Exposure prediction

Exposure estimation and reference to its source:

inhalative: 50 ppm

dermal: 1.37 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.11

inhalative: 0.10

dermal: 0.01

all relevant routes: 0.11

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

Continuous process; Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 3

## Use in closed batch process (synthesis or formulation)

### General exposures (closed systems) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

#### Exposure prediction

Exposure estimation and reference to its source:

inhalative: 100 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.2

inhalative: 0.20

dermal: 0.002

all relevant routes: 0.20

---

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

Batch process. Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 4

### **Use in batch and other process (synthesis) where opportunity for exposure arises Process sampling (open systems) (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 6.86 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.54

inhalative: 0.50

dermal: 0.04

all relevant routes: 0.54

#### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 5

### **Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Mixing operations (open systems) (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm (local exhaust ventilation - efficiency of at least [%]: 80)

dermal: 0.07 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 99)

Risk characterisation ratio (RCR):

RCR: 0.2

inhalative: 0.20

dermal: 0.00

all relevant routes: 0.20

---

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation.

Operational conditions and risk management measures:

Batch process;  
Process sampling;  
with local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 6

### **Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)**

#### **Mixing operations (open systems) (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 350 ppm (dilution ventilation effectiveness: 30 %)

dermal: 13.71 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.77

inhalative: 0.70

dermal: 0.07

all relevant routes: 0.77

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Ensure operation is undertaken outdoors.

Operational conditions and risk management measures:

Batch process  
Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 7

### **Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)**

#### **Mixing operations (open systems) (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

---

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 300 ppm (exposure duration: 1 - 4 h)

dermal: 13.71 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.67

inhalative: 0.60

dermal: 0.07

all relevant routes: 0.67

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Avoid carrying out activities involving exposure for more than 4 h.

Operational conditions and risk management measures:

Batch process

Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 8

## Calendering operations

### Calendering (including Banburys); with local exhaust ventilation (worker)

#### List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 420 ppm (local exhaust ventilation - efficiency of at least [%]: 80)

dermal: 27.43 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 95)

Risk characterisation ratio (RCR):

RCR: 0.99

inhalative: 0.84

dermal: 0.15

all relevant routes: 0.99

## Risk management measures

Operational conditions and risk management measures:

Ensure operation is undertaken outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 9

## Calendering operations

### Calendering (including Banburys) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

---

---

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 420 ppm (dilution ventilation effectiveness: 30 %)  
dermal: 27.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.99  
inhalative: 0.84  
dermal: 0.15  
all relevant routes: 0.99

## Risk management measures

Operational conditions and risk management measures:

Ensure operation is undertaken outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 10

## Calendering operations

### Calendering (including Banburys) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 360 ppm (exposure duration: 1 - 4 h)  
dermal: 27.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.87  
inhalative: 0.72  
dermal: 0.15  
all relevant routes: 0.87

## Risk management measures

Operational conditions and risk management measures:

Avoid carrying out activities involving exposure for more than 4 h.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 11

## Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

### Bulk transfers (worker)

#### List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

---

---

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 100 ppm (local exhaust ventilation - efficiency of at least [%]: 80)  
dermal: 0.14 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 99)

Risk characterisation ratio (RCR):

RCR: 0.2  
inhalative: 0.20  
dermal: 0.001  
all relevant routes: 0.20

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation.

Operational conditions and risk management measures:

Non-dedicated facility  
Transfer from/pouring from containers  
with local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 12

## Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

### Bulk transfers (worker)

#### List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 350 ppm (dilution ventilation effectiveness: 30 %)  
dermal: 13.71 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.77  
inhalative: 0.70  
dermal: 0.07  
all relevant routes: 0.77

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Ensure operation is undertaken outdoors.

Operational conditions and risk management measures:

Non-dedicated facility  
Transfer from/pouring from containers

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 13

**Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities**  
**Bulk transfers (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

**Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 300 ppm (exposure duration: 1 - 4 h)  
dermal: 13.71 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.67  
inhalative: 0.60  
dermal: 0.07  
all relevant routes: 0.67

**Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Avoid carrying out activities involving exposure for more than 4 h.

Operational conditions and risk management measures:

Non-dedicated facility  
Transfer from/pouring from containers

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 14

**Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities**  
**Bulk transfers (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

**Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 250 ppm  
dermal: 6.86 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.54  
inhalative: 0.50  
dermal: 0.04  
all relevant routes: 0.54

**Risk management measures**

Operational conditions and risk management measures:

Dedicated facility  
Transfer from/pouring from containers

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

---

Contributing exposure scenario 15

## **Transfer of substance or preparation into small containers (dedicated filling line, including weighing)**

### **Small package filling (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 6.86 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.54

inhalative: 0.50

dermal: 0.04

all relevant routes: 0.54

#### **Risk management measures**

Operational conditions and risk management measures:

Dedicated facility;

Pouring from small containers

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 16

## **Roller application or brushing**

### **Equipment cleaning and maintenance (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC10: Roller application or brushing

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm (local exhaust ventilation - efficiency of at least [%]: 80)

dermal: 1.37 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 95)

Risk characterisation ratio (RCR):

RCR: 0.21

inhalative: 0.20

dermal: 0.007

all relevant routes: 0.21

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation.

Operational conditions and risk management measures:

Or: Equipment cleaning and maintenance; with local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

---

Contributing exposure scenario 17

**Roller application or brushing**  
**Equipment cleaning and maintenance (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC10: Roller application or brushing

**Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 300 ppm (TRA Concentration factor 5 - 25 %)

dermal: 16.46 mg/kg/d (TRA Concentration factor 5 - 25 %)

Risk characterisation ratio (RCR):

RCR: 0.69

inhalative: 0.60

dermal: 0.09

all relevant routes: 0.69

**Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Limit the substance content in the product to 25 %.

Operational conditions and risk management measures:

Or: Equipment cleaning and maintenance

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 18

**Roller application or brushing**  
**Equipment cleaning and maintenance (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC10: Roller application or brushing

**Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 300 ppm (exposure duration: 1-4 h)

dermal: 27.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.75

inhalative: 0.60

dermal: 0.15

all relevant routes: 0.75

**Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Avoid carrying out activities involving exposure for more than 4 h.

Operational conditions and risk management measures:

Or: Equipment cleaning and maintenance

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 19

## **Non industrial spraying**

### **Spraying/fogging by manual application (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC11: Non industrial spraying

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 200 ppm (local exhaust ventilation - efficiency of at least [%]: 80)

dermal: 2.14 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 98)

Risk characterisation ratio (RCR):

RCR: 0.41

inhalative: 0.40

dermal: 0.01

all relevant routes: 0.41

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation.

Operational conditions and risk management measures:

with local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 20

## **Non industrial spraying**

### **Spraying/fogging by manual application (worker)**

#### **List of use descriptors**

Process categories [PROC]:

PROC11: Non industrial spraying

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 252 ppm (local exhaust ventilation - efficiency of at least [%]: 30; TRA

Concentration factor 5 - 25 %; Exposure duration: 1-4 h)

dermal: 64.28 mg/kg/d (TRA Concentration factor 5 - 25 %)

Risk characterisation ratio (RCR):

RCR: 0.85

inhalative: 0.50

dermal: 0.35

all relevant routes: 0.85

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Limit the substance content in the product to 25 %. Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 h.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 21

**Non industrial spraying**  
**Spraying/fogging by manual application (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC11: Non industrial spraying

**Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 200 ppm (Exposure duration: 15 min - 1 h)

dermal: 107.14 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.98

inhalative: 0.40

dermal: 0.58

all relevant routes: 0.98

**Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Avoid carrying out activities involving exposure for more than 1 h.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 22

**Non industrial spraying**  
**Spraying/fogging by manual application (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC11: Non industrial spraying

**Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm (Respiratory protective device, efficiency of 90%)

dermal: 107.14 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.78

inhalative: 0.20

dermal: 0.58

all relevant routes: 0.78

**Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Wear a respirator conforming to EN140 with Type A filter or better.

---

Contributing exposure scenario 23

**Treatment of articles by dipping and pouring**  
**Dipping, immersion and pouring (worker)**

**List of use descriptors**

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

---

---

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 250 ppm

dermal: 13.71 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.57

inhalative: 0.50

dermal: 0.07

all relevant routes: 0.57

## Risk management measures

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 24

## Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

### List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 100 ppm (local exhaust ventilation - efficiency of at least [%]: 80)

dermal: 0.34 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 90)

Risk characterisation ratio (RCR):

RCR: 0.2

inhalative: 0.20

dermal: 0.002

all relevant routes: 0.20

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation.

Operational conditions and risk management measures:

with local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 25

## Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

### List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

---

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 300 ppm (TRA exposure duration 1 - 4 h)

dermal: 3.43 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 90)

Risk characterisation ratio (RCR):

RCR: 0.62

inhalative: 0.60

dermal: 0.02

all relevant routes: 0.62

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Avoid carrying out activities involving exposure for more than 4 h.

Operational conditions and risk management measures:

with local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 26

## Use in laboratory reagents, Laboratory activities (small scale) (worker)

### List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 50 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.1

inhalative: 0.10

dermal: 0.002

all relevant routes: 0.10

## Risk management measures

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

Contributing exposure scenario 27

## Hand-mixing with intimate contact and only PPE available (PPE)

## Hand application - Finger paints, Pastels, adhesives (worker)

### List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 300 ppm (TRA Concentration factor 5 - 25 %)

dermal: 16.97 mg/kg/d (TRA Concentration factor 5 - 25 %; Gloves)

Risk characterisation ratio (RCR):

RCR: 0.96

inhalative: 0.60

dermal: 0.09

all relevant routes: 0.69

---

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Limit the substance content in the product to 25 %.

Conditions and measures related to personal protection, hygiene and health evaluation:

Wear suitable gloves tested to EN374.

---

Contributing exposure scenario 28

**Hand-mixing with intimate contact and only PPE available (PPE)**

**Hand application - Finger paints, Pastels, adhesives (worker)**

### **List of use descriptors**

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm (TRA exposure duration 15 min - 1 h)

dermal: 141.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.96

inhalative: 0.20

dermal: 0.76

all relevant routes: 0.96

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Avoid carrying out activities involving exposure for more than 1h.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

---

### **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

not applicable

---

## Exposure scenario 13: Use in laboratories

---

### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Use of small quantities within laboratory settings, including material transfers and equipment cleaning

Remark: Process categories [PROC]

PROC10, PROC15

Process Categories (additionally): PROC19

Control of worker exposure:

See section risk management measures

Human Health, Worker exposure and risk assessment:

Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:

<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:

ERC8a

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                          |         |
|-------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 13: Use in laboratories (environment) | Page 74 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 13: Use in laboratories (worker)      | Page 75 |

---

Contributing exposure scenario 1

### General information

### Applies to all contributing exposure scenarios related to exposure scenario 13: Use in laboratories (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

---

---

## Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 13: Use in laboratories (worker)**

## List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE available

## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

## Risk management measures

Conditions and measures related to information and behavioural advice to consumers:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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**Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 14: Uses in coatings

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### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Remark:

Process categories [PROC]  
PROC5, PROC 8a, PROC10, PROC13  
Process Categories (additionally): PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC11, PROC15, PROC19  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>  
Examples for Environmental release categories [ERC]:  
ERC8a, ERC8c, ERC8d, ERC8f  
Environment, ECT acetone:  
Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>  
Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                       |         |
|-------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 14: Uses in coatings (environment) | Page 77 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 14: Uses in coatings (worker)      | Page 78 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 14: Uses in coatings (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems  
ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix  
ERC8d: wide dispersive outdoor use of processing aids in open systems  
ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

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Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.

Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.

Typical technical measures are closed systems or scrubbers or charcoal adsorbers.

Treat air emission to provide a typical removal efficiency of (%): 90

Operational conditions and risk management measures:

Common practices vary across sites thus conservative process release estimates used.

Please use the 'ECT Acetone' to check your local conditions.

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 14:**

**Uses in coatings (worker)**

### List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC11: Non industrial spraying

PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE available

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

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---

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

### **Risk management measures**

Conditions and measures related to information and behavioural advice to consumers:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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### **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 15: Use in binders and release agents

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### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting and handling of waste

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                                        |         |
|-------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 15: Use in binders and release agents (environment) | Page 80 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 15: Use in binders and release agents (worker)      | Page 81 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 15: Use in binders and release agents (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems  
ERC8b: Wide dispersive indoor use of reactive substances in open systems  
ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix  
ERC8d: wide dispersive outdoor use of processing aids in open systems  
ERC8e: Wide dispersive outdoor use of reactive substances in open systems  
ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

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## Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable  
Amounts used:  
Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.  
Duration and frequency of use:  
360 d/y  
Other relevant operational conditions:  
Indoor/Outdoor use

## Exposure prediction

Exposure estimation and reference to its source:  
Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.  
Risk characterisation ratio (RCR):  
ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:  
Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:  
Please use the Excel-Tool 'ECT Acetone' to check your local conditions.  
Conditions and measures related to external treatment of waste for disposal:  
External treatment and disposal of waste should comply with applicable local and/or national regulations.  
Conditions and measures related to external recovery of waste:  
External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 15: Use in binders and release agents (worker)**

## List of use descriptors

Process categories [PROC]:  
PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC6: Calendaring operations  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
PROC10: Roller application or brushing  
PROC11: Non industrial spraying

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## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 16: Polymer production

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### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Manufacturing of formulated polymers

Remark: Process categories [PROC]: PROC8a

Process Categories (additionally): PROC1, PROC2, PROC8b, PROC9, PROC14

Control of worker exposure:

See section risk management measures

Human Health, Worker exposure and risk assessment:

Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:

<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:

ERC8a, ERC8d, ERC8c, ERC8f

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                         |         |
|-------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 16: Polymer production (environment) | Page 83 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 16: Polymer production (worker)      | Page 84 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 16: Polymer production (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems

ERC8d: wide dispersive outdoor use of processing aids in open systems

ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix

ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

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Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 16:**

**Polymer production (worker)**

### List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

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## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 17: Polymer processing

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### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Processing of formulated polymers including material transfers, moulding and forming activities, material re-works and associated maintenance

Remark: Process categories [PROC]: PROC8a  
Process Categories (additionally): PROC1, PROC2, PROC8b, PROC9, PROC14  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>  
Examples for Environmental release categories [ERC]:  
ERC8a, ERC8d, ERC8c, ERC8f  
Environment, ECT acetone:  
Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>  
Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Contributing Scenarios:

|   |                                                                                                                                         |         |
|---|-----------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 17: Polymer processing (environment) | Page 86 |
| 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 17: Polymer processing (worker)      | Page 87 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 17: Polymer processing (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems  
ERC8d: wide dispersive outdoor use of processing aids in open systems  
ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix  
ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable  
Amounts used:  
Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

---

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 17:**

### Polymer processing (worker)

#### List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

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## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 18: Use in cleaning agents

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### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Covers the use as a component of cleaning products including pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC19  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC8a, Environmental release categories (additionally): ERC8d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                             |         |
|-------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 18: Use in cleaning agents (environment) | Page 89 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 18: Use in cleaning agents (worker)      | Page 90 |

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Contributing exposure scenario 1

### General information

### Applies to all contributing exposure scenarios related to exposure scenario 18: Use in cleaning agents (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

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Other relevant operational conditions:

Indoor/Outdoor use

### Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.

Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.

Typical technical measures are closed systems or scrubbers or charcoal adsorbers.

Treat air emission to provide a typical removal efficiency of (%): 90

### Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 18:**

**Use in cleaning agents (worker)**

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC10: Roller application or brushing

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

PROC19: Hand-mixing with intimate contact and only PPE available

### Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

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## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 19: Oil field well drilling and production operations

### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Covers the use as a component of cleaning products including pouring/unloading from drums or containers

Remark: Process categories [PROC]  
PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC8d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                                                        |         |
|-------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 19: Oil field well drilling and production operations (environment) | Page 92 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 19: Oil field well drilling and production operations (worker)      | Page 93 |

---

Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 19: Oil field well drilling and production operations (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC8d: wide dispersive outdoor use of processing aids in open systems

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

---

---

## Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 19: Oil field well drilling and production operations (worker)**

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

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---

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

---

## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 20: Agrochemical uses

---

### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

Remark: Process categories [PROC]  
PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13, PROC19  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:

ERC8a, ERC8d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                        |         |
|-------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 20: Agrochemical uses (environment) | Page 95 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 20: Agrochemical uses (worker)      | Page 96 |

---

Contributing exposure scenario 1

### General information

### Applies to all contributing exposure scenarios related to exposure scenario 20: Agrochemical uses (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems

ERC8d: wide dispersive outdoor use of processing aids in open systems

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

---

---

## Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 20:**

### Agrochemical uses (worker)

#### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC11: Non industrial spraying  
PROC13: Treatment of articles by dipping and pouring  
PROC19: Hand-mixing with intimate contact and only PPE available

## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

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---

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

---

## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

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## Exposure scenario 21: De-icing and anti-icing applications

---

### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Ice prevention and de-icing of vehicles, aircraft and other equipment by spraying.

Remark: Process categories [PROC]

PROC1, PROC2, PROC8b, PROC11, PROC19

Control of worker exposure:

See section risk management measures

Human Health, Worker exposure and risk assessment:

Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:

<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:

ERC8d

Environment, ECT acetone:

Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                                           |         |
|-------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 21: De-icing and anti-icing applications (environment) | Page 98 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 21: De-icing and anti-icing applications (worker)      | Page 99 |

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 21: De-icing and anti-icing applications (environment)**

### List of use descriptors

Environmental release categories [ERC]:

ERC8d: wide dispersive outdoor use of processing aids in open systems

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

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---

## Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 21: De-icing and anti-icing applications (worker)**

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC11: Non industrial spraying  
PROC19: Hand-mixing with intimate contact and only PPE available

## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

---

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

---

## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 22: Explosives manufacture & use

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### List of use descriptors

Sector of uses [SU]: SU22: Professional uses

### Application

Activities and processes: Covers exposures arising from the manufacture and use of slurry explosives including materials transfer, mixing and charging and equipment cleaning.

Remark: Process categories [PROC]  
PROC1, PROC3, PROC5, PROC8a, PROC8b  
Control of worker exposure:  
See section risk management measures  
Human Health, Worker exposure and risk assessment:  
Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website:  
<http://cefic.org/templates/shwPublications.asp?HID=750>

Examples for Environmental release categories [ERC]:  
ERC8d

Environment, ECT acetone:  
Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:  
<http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx>

Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

|                         |   |                                                                                                                                                   |          |
|-------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Contributing Scenarios: | 1 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 22: Explosives manufacture & use (environment) | Page 101 |
|                         | 2 | General information<br>Applies to all contributing exposure scenarios related to exposure scenario 22: Explosives manufacture & use (worker)      | Page 102 |

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Contributing exposure scenario 1

### General information

### Applies to all contributing exposure scenarios related to exposure scenario 22: Explosives manufacture & use (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC8d: wide dispersive outdoor use of processing aids in open systems

### Operational conditions

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maximum tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

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## Exposure prediction

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used.  
Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

## Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.  
Typical technical measures are closed systems or scrubbers or charcoal adsorbers.  
Treat air emission to provide a typical removal efficiency of (%): 90 %

## Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

---

Contributing exposure scenario 2

## General information

**Applies to all contributing exposure scenarios related to exposure scenario 22:  
Explosives manufacture & use (worker)**

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

## Operational conditions

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

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## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

---

## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 23: Generic exposure scenario (GES): Consumer uses of Acetone (ES 24 - 26)

### List of use descriptors

Sector of uses [SU]: SU21: Consumer uses

### Application

Activities and processes: Generic exposure scenario, applies to all contributing exposure scenarios related to exposure scenario 24 - 26 (consumer uses):

ES24 - Uses in coatings  
ES25 - Use in cleaning agents  
ES26 - De-icing and anti-icing applications

|                         |    |                                                                   |          |
|-------------------------|----|-------------------------------------------------------------------|----------|
| Contributing Scenarios: | 1  | Adhesives, sealants                                               | Page 105 |
|                         |    | Glues, hobby use (Consumer)                                       |          |
|                         | 2  | Adhesives, sealants                                               | Page 105 |
|                         |    | Glues DIY-use (Consumer)                                          |          |
|                         | 3  | Adhesives, sealants                                               | Page 106 |
|                         |    | Glue from spray (Consumer)                                        |          |
|                         | 4  | Adhesives                                                         | Page 106 |
|                         |    | Sealants (Consumer)                                               |          |
|                         | 5  | Air care products                                                 | Page 107 |
|                         |    | Air care, instant action (aerosol sprays) (Consumer)              |          |
|                         | 6  | Air care products                                                 | Page 107 |
|                         |    | Air care, continuous action (solid and liquid) (Consumer)         |          |
|                         | 7  | Anti-freeze and de-icing products                                 | Page 108 |
|                         |    | Washing car window (Consumer)                                     |          |
|                         | 8  | Anti-freeze and de-icing products                                 | Page 108 |
|                         |    | Pouring into radiator (Consumer)                                  |          |
|                         | 9  | Anti-freeze and de-icing products                                 | Page 109 |
|                         |    | Lock de-icer (Consumer)                                           |          |
|                         | 10 | Coatings and paints, fillers, putties, thinners                   | Page 109 |
|                         |    | Waterborne latex wall paint (Consumer)                            |          |
|                         | 11 | Coatings and paints, fillers, putties, thinners                   | Page 110 |
|                         |    | Solvent rich, high solid, water borne paint (Consumer)            |          |
|                         | 12 | Coatings and paints, fillers, putties, thinners                   | Page 110 |
|                         |    | Aerosol spray can (Consumer)                                      |          |
|                         | 13 | Coatings and paints, fillers, putties, thinners                   | Page 111 |
|                         |    | Removers (paint-, glue-, wall paper-, sealant-remover) (Consumer) |          |
|                         | 14 | Fillers, putties, plasters, modelling clay                        | Page 111 |
|                         |    | Fillers and putty (Consumer)                                      |          |
|                         | 15 | Fillers, putties, plasters, modelling clay                        | Page 112 |
|                         |    | Plasters and floor equalizers (Consumer)                          |          |
|                         | 16 | Fillers, putties, plasters, modelling clay                        | Page 112 |
|                         |    | Modelling clay (Consumer)                                         |          |
|                         | 17 | Finger paints (Consumer)                                          | Page 113 |
|                         | 18 | Non-metal-surface treatment products                              | Page 113 |
|                         |    | Solvent rich, high solid, water borne paint (Consumer)            |          |
|                         | 19 | Non-metal-surface treatment products                              | Page 114 |
|                         |    | Aerosol spray can (Consumer)                                      |          |
|                         | 20 | Non-metal-surface treatment products                              | Page 114 |
|                         |    | Removers (paint-, glue-, wall paper-, sealant-remover) (Consumer) |          |
|                         | 21 | Lubricants, greases, release products                             | Page 115 |
|                         |    | Liquids (Consumer)                                                |          |

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|                         |    |                                                                                                                                                                                                                |          |
|-------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Contributing Scenarios: | 22 | Lubricants, greases, release products<br>Pastes (Consumer)                                                                                                                                                     | Page 115 |
|                         | 23 | Lubricants, greases, release products<br>Sprays (Consumer)                                                                                                                                                     | Page 116 |
|                         | 24 | Polishes and wax blends<br>Polishes, wax/cream (floor, furniture, shoes) (Consumer)                                                                                                                            | Page 116 |
|                         | 25 | Polishes and wax blends<br>Polishes, spray (furniture, shoes) (Consumer)                                                                                                                                       | Page 117 |
|                         | 26 | Washing and cleaning products (including solvent based products)<br>Laundry and dish washing products (Consumer)                                                                                               | Page 117 |
|                         | 27 | Washing and cleaning products (including solvent based products)<br>Cleaners, liquids (all purpose cleaners, sanitary products, floor<br>cleaners, glass cleaners, carpet cleaners, metal cleaners) (Consumer) | Page 118 |
|                         | 28 | Washing and cleaning products (including solvent based products)<br>Cleaners, trigger sprays (all purpose cleaners, sanitary products,<br>glass cleaners) (Consumer)                                           | Page 118 |
|                         | 29 | Welding and soldering products, flux products (Consumer)                                                                                                                                                       | Page 119 |

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Contributing exposure scenario 1

## **Adhesives, sealants**

### **Glues, hobby use (Consumer)**

#### **List of use descriptors**

Product (Sub-)Categories:

PC1: Adhesives, sealants

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 30% (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 4 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 35.73 cm<sup>2</sup>.

For each use event, covers use amounts up to 9 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 2

## **Adhesives, sealants**

### **Glues DIY-use (Consumer)**

#### **List of use descriptors**

Product (Sub-)Categories:

PC1: Adhesives, sealants

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 30% (unless otherwise stated)

---

---

Duration and frequency of use:

Covers use up to 1 d/y  
1 application per day.  
For each use event, covers use amounts up to 6 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 110 cm<sup>2</sup>.  
For each use event, covers use amounts up to 6390 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 3

## Adhesives, sealants

### Glue from spray (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC1: Adhesives, sealants

#### Operational conditions

Concentration of the substance in a mixture:

<= 30% (unless otherwise stated)

Duration and frequency of use:

Covers use up to 6 d/y  
1 application per day.  
For each use event, covers use amounts up to 4 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 35.73 cm<sup>2</sup>.  
For each use event, covers use amounts up to 85.05 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

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Contributing exposure scenario 4

## Adhesives

### Sealants (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC1: Adhesives, sealants

#### Operational conditions

Concentration of the substance in a mixture:

<= 30% (unless otherwise stated)

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Duration and frequency of use:

Covers use up to 365 d/y  
1 application per day.  
For each use event, covers use amounts up to 1 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 35.73 cm<sup>2</sup>.  
For each use event, covers use amounts up to 75 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 5

### Air care products

### Air care, instant action (aerosol sprays) (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC3: Air care products

### Operational conditions

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y  
Covers use up to 4x/ per day.  
For each use event, covers use amounts up to 0.25 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 0.1 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 6

### Air care products

### Air care, continuous action (solid and liquid) (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC3: Air care products

### Operational conditions

Concentration of the substance in a mixture:

<= 10 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y  
1 application per day.  
For each use event, covers use amounts up to 8.0 h.

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Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 35.70 cm<sup>2</sup>.

For each use event, covers use amounts up to 0.48 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 7

## Anti-freeze and de-icing products

### Washing car window (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC4: Anti-freeze and de-icing products

#### Operational conditions

Concentration of the substance in a mixture:

<= 1 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 0.02 h.

Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>. Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 0.5 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 8

## Anti-freeze and de-icing products

### Pouring into radiator (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC4: Anti-freeze and de-icing products

#### Operational conditions

Concentration of the substance in a mixture:

<= 10 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 0.17 h.

---

Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 428 cm<sup>2</sup>.

For each use event, covers use amounts up to 2000 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 9

## Anti-freeze and de-icing products

### Lock de-icer (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC4: Anti-freeze and de-icing products

#### Operational conditions

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 0.25 h.

Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 214.40 cm<sup>2</sup>.

For each use event, covers use amounts up to 4 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 10

## Coatings and paints, fillers, putties, thinners

### Waterborne latex wall paint (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC9a: Coatings and paints, thinners, paint removers

#### Operational conditions

Concentration of the substance in a mixture:

<= 1.5 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 4 d/y

1 application per day.

For each use event, covers use amounts up to 2.20 h.

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---

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 428.75 cm<sup>2</sup>.

For each use event, covers use amounts up to 2760 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 11

### Coatings and paints, fillers, putties, thinners

#### Solvent rich, high solid, water borne paint (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC9a: Coatings and paints, thinners, paint removers

#### Operational conditions

Concentration of the substance in a mixture:

<= 27.5 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 6 d/y

1 application per day.

For each use event, covers use amounts up to 2.20 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 428.75 cm<sup>2</sup>.

For each use event, covers use amounts up to 744 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 12

### Coatings and paints, fillers, putties, thinners

#### Aerosol spray can (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC9a: Coatings and paints, thinners, paint removers

#### Operational conditions

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 2 d/y

1 application per day.

For each use event, covers use amounts up to 0.33 h.

---

Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 215 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 13

## Coatings and paints, fillers, putties, thinners

### Removers (paint-, glue-, wall paper-, sealant-remover) (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC9a: Coatings and paints, thinners, paint removers

#### Operational conditions

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 3 d/y

1 application per day.

For each use event, covers use amounts up to 2 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>.

For each use event, covers use amounts up to 491 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 14

## Fillers, putties, plasters, modelling clay

### Fillers and putty (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC9b: Fillers, putties, plasters, modelling clay

#### Operational conditions

Concentration of the substance in a mixture:

<= 2 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 12 d/y

1 application per day.

For each use event, covers use amounts up to 4 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

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---

## Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 35.73 cm<sup>2</sup>.  
For each use event, covers use amounts up to 85 g.

## Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 15

## Fillers, putties, plasters, modelling clay Plasters and floor equalizers (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC9b: Fillers, putties, plasters, modelling clay

### Operational conditions

Concentration of the substance in a mixture:

<= 2 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 12 d/y  
1 application per day.  
For each use event, covers use amounts up to 2 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

## Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>.  
For each use event, covers use amounts up to 13800 g.

## Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 16

## Fillers, putties, plasters, modelling clay Modelling clay (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC9b: Fillers, putties, plasters, modelling clay

### Operational conditions

Concentration of the substance in a mixture:

<= 1 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y  
1 application per day.

## Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 254.40 cm<sup>2</sup>.  
For each use event, assumes swallowed amount of 1 g.

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## Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 17

## Finger paints (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC9c: Finger paints

### Operational conditions

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y  
1 application per day.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 254.40 cm<sup>2</sup>.  
For each use event, assumes swallowed amount of 1.35 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 18

## Non-metal-surface treatment products

## Solvent rich, high solid, water borne paint (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC15: Non-metal-surface treatment products

### Operational conditions

Concentration of the substance in a mixture:

<= 27.5 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 6 d/y  
1 application per day.  
For each use event, covers use amounts up to 2.2 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 428.75 cm<sup>2</sup>.  
For each use event, covers use amounts up to 744 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

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Contributing exposure scenario 19

## **Non-metal-surface treatment products**

### **Aerosol spray can (Consumer)**

#### **List of use descriptors**

Product (Sub-)Categories:

PC15: Non-metal-surface treatment products

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 2 d/y

1 application per day.

For each use event, covers use amounts up to 0.33 h.

Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 215 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 20

## **Non-metal-surface treatment products**

### **Removers (paint-, glue-, wall paper-, sealant-remover) (Consumer)**

#### **List of use descriptors**

Product (Sub-)Categories:

PC15: Non-metal-surface treatment products

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 3 d/y

1 application per day.

For each use event, covers use amounts up to 2.00 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>.

For each use event, covers use amounts up to 491 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

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Contributing exposure scenario 21

## **Lubricants, greases, release products**

### **Liquids (Consumer)**

#### **List of use descriptors**

Product (Sub-)Categories:

PC24: Lubricants, greases, release products

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 100 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 4 d/y

1 application per day.

For each use event, covers use amounts up to 0.17 h.

Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 468 cm<sup>2</sup>.

For each use event, covers use amounts up to 2200 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 22

## **Lubricants, greases, release products**

### **Pastes (Consumer)**

#### **List of use descriptors**

Product (Sub-)Categories:

PC24: Lubricants, greases, release products

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 20 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 10 d/y

1 application per day.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 468 cm<sup>2</sup>.

For each use event, covers use amounts up to 34 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

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Contributing exposure scenario 23

## **Lubricants, greases, release products Sprays (Consumer)**

### **List of use descriptors**

Product (Sub-)Categories:

PC24: Lubricants, greases, release products

### **Operational conditions**

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 6 d/y

1 application per day.

For each use event, covers use amounts up to 0,17 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 428.75 cm<sup>2</sup>.

For each use event, covers use amounts up to 73 g.

### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 24

## **Polishes and wax blends Polishes, wax/cream (floor, furniture, shoes) (Consumer)**

### **List of use descriptors**

Product (Sub-)Categories:

PC31: Polishes and wax blends

### **Operational conditions**

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 29 d/y

1 application per day.

For each use event, covers use amounts up to 1.23 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 430 cm<sup>2</sup>.

For each use event, covers use amounts up to 142 g.

### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

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Contributing exposure scenario 25

## **Polishes and wax blends**

### **Polishes, spray (furniture, shoes) (Consumer)**

#### **List of use descriptors**

Product (Sub-)Categories:

PC31: Polishes and wax blends

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 8 d/y

1 application per day.

For each use event, covers use amounts up to 0.33 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 430 cm<sup>2</sup>.

For each use event, covers use amounts up to 35 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

Contributing exposure scenario 26

## **Washing and cleaning products (including solvent based products)**

### **Laundry and dish washing products (Consumer)**

#### **List of use descriptors**

Product (Sub-)Categories:

PC35: Washing and cleaning products (including solvent based products)

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 5 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 0.50 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>.

For each use event, covers use amounts up to 15 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

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Contributing exposure scenario 27

**Washing and cleaning products (including solvent based products)**

**Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) (Consumer)**

**List of use descriptors**

Product (Sub-)Categories:

PC35: Washing and cleaning products (including solvent based products)

**Operational conditions**

Concentration of the substance in a mixture:

<= 5 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 128 d/y

1 application per day.

For each use event, covers use amounts up to 0.33 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

**Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>.

For each use event, covers use amounts up to 27 g.

**Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

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Contributing exposure scenario 28

**Washing and cleaning products (including solvent based products)**

**Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) (Consumer)**

**List of use descriptors**

Product (Sub-)Categories:

PC35: Washing and cleaning products (including solvent based products)

**Operational conditions**

Concentration of the substance in a mixture:

<= 15 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 128 d/y

1 application per day.

For each use event, covers use amounts up to 0.17 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

**Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 428 cm<sup>2</sup>.

For each use event, covers use amounts up to 35 g.

**Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

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Contributing exposure scenario 29

## **Welding and soldering products, flux products (Consumer)**

### **List of use descriptors**

Product (Sub-)Categories:

PC38: Welding and soldering products (with flux coatings or flux cores), flux products

### **Operational conditions**

Concentration of the substance in a mixture:

<= 20 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 1 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 12 g.

### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

---

## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

Shown are the result of the quantitative exposure and risk assessment prepared based on the 'ESIG GES Consumer Tool'. This tool can be downloaded from the ESIG website:  
<http://www.esig.org/en/regulatory-information/reach/ges-library/consumer-gess>

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## Exposure scenario 24: Uses in coatings

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### List of use descriptors

Sector of uses [SU]: SU21: Consumer uses  
Product Categories: PC1: Adhesives, sealants  
PC4: Anti-freeze and de-icing products  
PC5: Artists supply and hobby preparations  
PC9: Coatings and paints, fillers, putties, thinners  
PC10: Building and construction preparations not covered elsewhere  
PC15: Non-metal-surface treatment products  
PC24: Lubricants, greases, release products  
PC31: Polishes and wax blends

### Application

Activities and processes: Covers the use in coatings (paints, inks, adhesives, etc) and including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation) and equipment cleaning and maintenance and associated laboratory activities.

Remark: Product categories [PC]: PC1, PC4, PC5, PC9, PC10, PC15, PC24, PC31  
Consumer exposure and risk assessment:  
Shown are the result of the quantitative exposure and risk assessment prepared based on the 'ESIG GES Consumer Tool'. This tool can be downloaded from the ESIG website:  
<http://www.esig.org/en/regulatory-information/reach/ges-library/consumer-gess>

Contributing Scenarios: 1 General information  
Applies to all contributing exposure scenarios related to exposure scenario 24: Uses in coatings (Consumer)

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 24: Uses in coatings (Consumer)**

### List of use descriptors

Product (Sub-)Categories:  
PC1: Adhesives, sealants  
PC4: Anti-freeze and de-icing products  
PC5: Artists supply and hobby preparations  
PC9: Coatings and paints, fillers, putties, thinners  
PC10: Building and construction preparations not covered elsewhere  
PC15: Non-metal-surface treatment products  
PC24: Lubricants, greases, release products  
PC31: Polishes and wax blends

### Operational conditions

Product characteristics: liquid  
Vapour pressure: 24000 Pa

Concentration of the substance in a mixture:  
Unless stated differently, covers percentage substance in the product up to 100 %

Duration and frequency of use:  
Unless stated differently, covers frequency up to 4/d. For each use event, covers use amounts up to 8h.

Other relevant operational conditions:  
Assumes activities are at ambient temperature (unless stated differently). Assumes a room volume of maximum [m3]: 20 m<sup>3</sup>. Assumes use with typical ventilation

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---

## **Exposure prediction**

Exposure estimation and reference to its source:

Unless stated differently, covers use up to 37500 g.

Covers skin contact area up to 6600 cm<sup>2</sup>.

refer to GES No. 23 consumer uses

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## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

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## Exposure scenario 25: Use in cleaning agents

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### List of use descriptors

Sector of uses [SU]: SU21: Consumer uses  
Product Categories: PC3: Air care products  
PC4: Anti-freeze and de-icing products  
PC9: Coatings and paints, fillers, putties, thinners  
PC24: Lubricants, greases, release products  
PC32: Polymer preparations and compounds  
PC35: Washing and cleaning products (including solvent based products)  
PC38: Welding and soldering products (with flux coatings or flux cores), flux products

### Application

Activities and processes: Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

Remark: Product categories [PC]: PC3, PC4, PC9, PC24, PC32, PC35, PC38  
Consumer exposure and risk assessment:  
Shown are the result of the quantitative exposure and risk assessment prepared based on the 'ESIG GES Consumer Tool'. This tool can be downloaded from the ESIG website:  
<http://www.esig.org/en/regulatory-information/reach/ges-library/consumer-gess>

Contributing Scenarios: 1 General information  
Applies to all contributing exposure scenarios related to exposure scenario 25: Use in cleaning agents (Consumer)

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 25: Use in cleaning agents (Consumer)**

### List of use descriptors

Product (Sub-)Categories:  
PC3: Air care products  
PC4: Anti-freeze and de-icing products  
PC9: Coatings and paints, fillers, putties, thinners  
PC24: Lubricants, greases, release products  
PC32: Polymer preparations and compounds  
PC35: Washing and cleaning products (including solvent based products)  
PC38: Welding and soldering products (with flux coatings or flux cores), flux products

### Operational conditions

Product characteristics: liquid  
Vapour pressure: 24000 Pa

Concentration of the substance in a mixture:  
Unless stated differently, covers percentage substance in the product up to 100 %

Duration and frequency of use:  
Unless stated differently, covers frequency up to 4/d. For each use event, covers use amounts up to 8h.

Other relevant operational conditions:  
Assumes activities are at ambient temperature (unless stated differently). Assumes a room volume of maximum [m3]: 20 m³. Assumes use with typical ventilation

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## **Exposure prediction**

Exposure estimation and reference to its source:

Unless stated differently, covers use up to 37500 g.

Covers skin contact area up to 6600 cm<sup>2</sup>.

refer to GES No. 23 consumer uses

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## **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

Shown are the result of the quantitative exposure and risk assessment prepared based on the 'ESIG GES Consumer Tool'. This tool can be downloaded from the ESIG website:

<http://www.esig.org/en/regulatory-information/reach/ges-library/consumer-gess>

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## Exposure scenario 26: De-icing and anti-icing applications

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### List of use descriptors

Sector of uses [SU]: SU21: Consumer uses  
Product Categories: PC4: Anti-freeze and de-icing products

### Application

Activities and processes: De-icing of vehicles and similar equipment by spraying.

Remark: Product categories [PC]: 4

Consumer exposure and risk assessment:

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Contributing Scenarios: 1 General information  
Applies to all contributing exposure scenarios related to exposure scenario 26: De-icing and anti-icing applications (Consumer)

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Contributing exposure scenario 1

### General information

**Applies to all contributing exposure scenarios related to exposure scenario 26: De-icing and anti-icing applications (Consumer)**

### List of use descriptors

Product (Sub-)Categories:  
PC4: Anti-freeze and de-icing products

### Operational conditions

Product characteristics: liquid

Vapour pressure: 24000 Pa

Concentration of the substance in a mixture:

Unless stated differently, covers percentage substance in the product up to 100 %

Duration and frequency of use:

Unless stated differently, covers frequency up to 4/d. For each use event, covers use amounts up to 8h.

Other relevant operational conditions:

Assumes activities are at ambient temperature (unless stated differently). Assumes a room volume of maximum [m3]: 20 m<sup>3</sup>. Assumes use with typical ventilation

### Exposure prediction

Exposure estimation and reference to its source:

Unless stated differently, covers use up to 37500 g.

Covers skin contact area up to 6600 cm<sup>2</sup>.

refer to GES No. 23 consumer uses

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