# Exoquat PK37

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Date of issue: 23/03/2016 Revision date: 27/03/2024 Version: 2.8

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Mixture
Product name : Exoquat PK37
UFI : 1GHF-ST25-3503-HTGK
EC-No. : 931-333-8
CAS-No. : 61789-40-0, 147170-44-3 (related CAS numbers)
Type of product : Aqueous solution.

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

#### 1.2.1. Relevant identified uses

Main use category : Consumer use,Professional use,Industrial use
Industrial/Professional use spec : Wide dispersive use
Use of the substance/mixture : amphoteric surfactants

| Title | Use descriptors |
|---|---|
| Industrial manufacture of AAPB<br>(ES Ref.: 1.0) | SU3, SU8, SU9, PC1, PC2, PC3, PC4, PC7, PC8, PC9a, PC9b, PC9c, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC12, PROC13, PROC15, PROC17, PROC19, PROC24, ERC1 |
| Formulation and other industrial use<br>(ES Ref.: 2.0) | SU5, SU10, SU19, PC1, PC2, PC3, PC4, PC7, PC8, PC9a, PC9b, PC9c, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15, PROC19, ERC2, ERC4 |
| Professional use<br>(ES Ref.: 3.0) | SU22, PC1, PC2, PC3, PC4, PC7, PC8, PC9a, PC9b, PC9c, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19, ERC8a |
| Consumer end-use of formulated products containing betaines<br>(ES Ref.: 4.0) | SU21, PC1, PC3, PC8, PC31, PC35, PC39, ERC8a |

Full text of use descriptors: see section 16

#### 1.2.2. Uses advised against

No additional information available

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

EOC Italia, branch of EOC Belgium
Via Famiglia Iona 25
IT– 13100 Vercelli
Italy
T +390161394695 - F +390161393907
reach@eocgroup.com - www.eocgroup.com

### 1.4. Emergency telephone number

Emergency number : +390161394695

| Country | Organisation/Company | Address | Emergency number | Comment |
|---|---|---|---|---|
| Austria | Vergiftungsinformationszentrale | Stubenring 6<br>1010 | +43 1 406 43 43 | |

| Country | Organisation/Company | Address | Emergency number | Comment |
|---|---|---|---|---|
| Belgium | Centre Anti-Poisons/Antigifcentrum<br>c/o Hôpital Militaire Reine Astrid | Rue Bruyn 1<br>1120 | +32 70 245 245 | Please dial: 070 245 245 for any urgent questions about intoxication (free of charge 24/7), if not accessible, dial: 02 264 96 30 (standard fee) |
| Bulgaria | Национален токсикологичен информационен център<br>Многопрофилна болница за активно лечение и спешна медицина "Н.И.Пирогов" | бул. Ген. Едуард И. Тотлебен 21<br>1606 | +359 2 9154 233 | |
| Croatia | Centar za kontrolu otrovanja<br>Institut za medicinska istraživanja i medicinu rada | Ksaverska Cesta 2<br>p.p. 291<br>10000 | +385 1 234 8342 | Information available 24/7 in Croatian and English |
| Cyprus | Κέντρου Δηλητηριάσεων | | 1401 | Operating hours 24 hours / 24 hours, 7 days a week |
| Czech Republic | Toxikologické informační středisko<br>Klinika pracovního lékařství VFN a 1. LF UK | Na Bojišti 1<br>120 00 | +420 224 919 293<br>+420 224 915 402 | |
| Denmark | Giftlinjen<br>Bispebjerg Hospital | Bispebjerg Bakke 23E<br>Opgang 20 C<br>2400 | +45 82 12 12 12 | |
| Estonia | Mürgistusteabekeskus<br>Terviseamet | Paldiski mnt 81<br>10614 | 16662<br>+372 7943 794 | Calling the hotline is anonymous and at the cost of a local call. |
| Finland | Myrkytystietokeskus | Stenbäckinkatu 9<br>PO BOX 100<br>00029 | +358 800 147 111<br>+358 9 471 977 | Open 24 hours a day 0800 147 111 (free of charge) 09 471 977 (normal rate call) |
| France | Centre Antipoison et de Toxicovigilance de Nancy<br>Hôpital Central | 29 avenue du Maréchal de Lattre-de-Tassigny<br>54035 | +33 3 83 22 50 50 | |
| Germany | Giftnotruf der Charité - Universitätsmedizin Berlin<br>CBF, Haus VIII (Wirtschaftgebäude), UG | Hindenburgdamm 30<br>12203 | +49 (0) 30 19240 | |
| Greece | Poisons Information Centre<br>Children's Hospital P&A Kyriakou | 11762 | +30 21 07 79 37 77 | |
| Iceland | Eitrunarmiðstöð<br>Landspítali | 101 | +354 543 22 22<br>+354 543 10 00 | Around the clock, every day |
| Ireland | National Poisons Information Centre<br>Beaumont Hospital | PO Box 1297<br>Beaumont Road<br>9 | +353 1 809 2566 (Healthcare professionals-24/7)<br>+353 1 809 2166 (public, 8am - 10pm, 7/7) | |
| Italy | Centro Antiveleni di Roma<br>CAV Policlinico "Umberto I", Università di Roma | Viale del Policlinico, 155<br>00161 | +39 06 4997 8000 | |

| Country | Organisation/Company | Address | Emergency number | Comment |
|---|---|---|---|---|
| Latvia | Valsts ugunsdzēsības un glābšanas dienests<br>Toksikoloģijas un sepses klīnikas<br>Saindēšanās un zāļu informācijas centrs | Hipokrāta 2<br>1038 | 112<br>+371 67 04 24 73 | works 24 hours a day |
| Lithuania | Apsinuodijimų informacijos biuras | Šiltnamių g. 29<br>04130 | +370 5 236 20 52<br>+370 687 53378 | |
| Luxembourg | Centre Anti-Poisons/Antigifcentrum<br>c/o Hôpital Central de la Base - Reine Astrid | Rue Bruyn 1<br>1120 | +352 8002 5500 | Free telephone number with a 24/7 access. Experts answer all urgency questions on dangerous products in French, Dutch and English |
| Malta | Medicines & Poisons Info Office | Mater Dei Hospital<br>MSD 2090 | +356 2545 6508 | |
| Netherlands | Nationaal Vergiftigingen Informatie Centrum | Huispostnummer B.00.118<br>Postbus 85500<br>3508 GA | +31 88 755 80 00 | Only for the purpose of informing medical personnel in cases of acute intoxications (24 hours a day, 7 days a week) |
| Norway | Giftinformasjonen<br>Helsedirektoratet | P.O. Box 7000 St. Olavs Plass<br>130 | +47 22 59 13 00 | Operating hours 24 hours / 24 hours, 7 days a week |
| Poland | Pomorskie Centrum Toksykologii<br>Szpital MSWiA | Ul. Kartuska 4/6<br>80-104 | +48 58 682 04 04<br>+48 58 309 83 83 | |
| Portugal | Centro de Informação Antivenenos<br>Instituto Nacional de Emergência Médica | Rua Almirante Barroso, 36<br>1000-013 | +351 800 250 250 | |
| Romania | Department of Clinical Toxicology<br>Spitalul de Urgenta Floreasca | Calea Floreasca | +40 21 230 8000 | |
| Slovakia | Národné toxikologické informačné centrum<br>Univerzitná nemocnica Bratislava, pracovisko Kramáre, Klinika pracovného lekárstva a toxikológie | Limbová 5<br>833 05 | +421 2 54 77 41 66 | |
| Slovenia | Center za klinično toksikologijo in farmakologijo<br>Univerzitetni klinični, Center ljubljana | Zaloška 7<br>1000 | 112<br>+386 522 52 83 | |
| Spain | Servicio de Información Toxicológica<br>Instituto Nacional de Toxicología y Ciencias Forenses, Departamento de Madrid | C/José Echegaray nº4<br>28232 | +34 91 562 04 20 | (Toxicological emergencies only). Information in Spanish (24/7) |
| Sweden | Giftinformationscentralen | Solna Strandväg 21<br>171 54 | 112 – begär Giftinformation | |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

| | |
|---|---|
| Serious eye damage/eye irritation, Category 1 | H318 |
| Hazardous to the aquatic environment – Chronic Hazard, Category 3 | H412 |

Full text of H- and EUH-statements: see section 16

### Adverse physicochemical, human health and environmental effects

No additional information available

## 2.2. Label elements

### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05

CLP Signal word : Danger

Contains : 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts

Hazard statements (CLP) : H318 - Causes serious eye damage.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP) : P273 - Avoid release to the environment.
P280 - Wear eye protection, protective clothing, protective gloves.
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER.

## 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

# SECTION 3: Composition/information on ingredients

## 3.1. Substances

Not applicable

## 3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|---|---|---|
| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | EC-No.: 931-333-8<br>REACH-no: 01-2119489410-39 | 36 | Eye Dam. 1, H318<br>Aquatic Chronic 3, H412 |

**Specific concentration limits:**

| Name | Product identifier | Specific concentration limits |
|---|---|---|
| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | EC-No.: 931-333-8<br>REACH-no: 01-2119489410-39 | ( 4 <C ≤ 10) Eye Irrit. 2, H319<br>( 10 <C ≤ 100) Eye Dam. 1, H318 |

Full text of H- and EUH-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Check the vital functions. If unconscious place in recovery position and seek medical advice. In case of respiratory arrest, administer artificial respiration. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Take victim to a doctor if irritation persists.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. Wash with plenty of water.

First-aid measures after eye contact : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not apply (chemical) neutralizing agents. In case of eye irritation consult an ophthalmologist.

First-aid measures after ingestion : Rinse mouth thoroughly with water. In case of ingestion. Take to hospital.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Eye damage / irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

If exposed or concerned, get medical advice and attention.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water. Carbon dioxide (CO2). sand. All extinguishing media can be used.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Low.

Explosion hazard : None known.

### 5.3. Advice for firefighters

Precautionary measures fire : Keep upwind. Do not inhale explosion and combustion gases.

Firefighting instructions : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Protection during firefighting : Wear a self-contained breathing apparatus and chemical protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment : Gloves. face shield. protective clothing. Contact with walking surface may result in formation of slippery film/falling hazard.

Emergency procedures : Wash contaminated clothing immediately. Keep public away from danger area.

#### 6.1.2. For emergency responders

Protective equipment : Wear protective gloves/protective clothing and eye/face protection.

Emergency procedures : Avoid contact with skin, eyes and clothes.

### 6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

### 6.3. Methods and material for containment and cleaning up

For containment : Contain leaking substance, pump over in suitable containers. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.

Methods for cleaning up : Contain leaking substance, pump over in suitable containers. Clean up any spills as soon as possible, using an absorbent material to collect it. Collect in closed and suitable containers for disposal. To clean the floor and all objects contaminated by this material, use plenty of water. Take off contaminated clothing.

Other information : Comply with local regulations for disposal.

### 6.4. Reference to other sections

Disposal: see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Comply with applicable regulations. Remove contaminated clothing immediately. Clean contaminated objects and areas thoroughly observing environmental regulations. Keep away from sources of ignition - No smoking. Handle in accordance with good industrial hygiene and safety procedures. Discharge into the environment must be avoided. Keep container tightly closed. Either local exhaust or general room ventilation is usually required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Use good personal hygiene practices.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Clean bulk tanks periodically to prevent accumulation of bacteria.

Storage conditions : Protect against: frost. Protect against direct sunlight.

Storage temperature : see technical datasheet

Storage area : Store in a dry area. Comply with applicable regulations. Collect spillage.

Packaging materials : Plastic.

### 7.3. Specific end use(s)

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 National occupational exposure and biological limit values

No additional information available

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Long-term - systemic effects, dermal | 12.5 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 44 mg/m³ |

| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | |
|---|---|
| **DNEL/DMEL (General population)** | |
| Long-term - systemic effects,oral | 7.5 mg/kg bodyweight/day |
| Long-term - systemic effects, dermal | 7.5 mg/kg bodyweight/day |
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 0.0135 mg/l |
| PNEC aqua (marine water) | 0.00135 mg/l |
| **PNEC (Sediment)** | |
| PNEC sediment (freshwater) | 1 mg/kg dwt |
| PNEC sediment (marine water) | 0.1 mg/kg dwt |
| **PNEC (Soil)** | |
| PNEC soil | 0.8 mg/kg dwt |
| **PNEC (STP)** | |
| PNEC sewage treatment plant | 3000 mg/l |

Safe handling : see section 7
Additional information : To date, no national critical limit values exist.

#### 8.1.5. Control banding

No additional information available

## 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

No additional information available

#### 8.2.2. Personal protection equipment

**Personal protective equipment symbol(s):**

#### 8.2.2.1. Eye and face protection

**Eye protection:**
Safety glasses (EN 166)

#### 8.2.2.2. Skin protection

**Skin and body protection:**
Avoid contact with skin.

**Hand protection:**
Nitrile rubber gloves (thickness: 0.38mm)

#### 8.2.2.3. Respiratory protection

**Respiratory protection:**
Not applicable

#### 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

**Environmental exposure controls:**
Do not allow uncontrolled discharge of product into the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Colour | : | Yellow. |
| Appearance | : | as liquid. |
| Odour | : | characteristic. |
| Odour threshold | : | Inconclusive |
| Melting point | : | Not available |
| Freezing point | : | Not available |
| Boiling point | : | like water |
| Flammability | : | Not flammable |
| Explosive properties | : | None. |
| Oxidising properties | : | None. |
| Explosive limits | : | Not applicable |
| Lower explosion limit | : | Not available |
| Upper explosion limit | : | Not available |
| Flash point | : | Not applicable |
| Auto-ignition temperature | : | Not applicable |
| Decomposition temperature | : | 208 °C |
| pH | : | ca. 5 |
| Viscosity, kinematic | : | ca. 47.17 mm²/s |
| Viscosity, dynamic | : | ca. 50 mPa·s BROOKFIELD RV 1/20 @20°C |
| Solubility | : | Soluble in water. |
| Partition coefficient n-octanol/water (Log Kow) | : | See separate substances |
| Partition coefficient n-octanol/water (Log Pow) | : | See separate substances |
| Vapour pressure | : | like water |
| Vapour pressure at 50°C | : | Not available |
| Density | : | 1.06 kg/l @20°C |
| Relative density | : | Not available |
| Relative vapour density at 20°C | : | like water |
| Particle characteristics | : | Not applicable |

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

| | | |
|---|---|---|
| Relative evaporation rate (butylacetate=1) | : | Not applicable |
| Relative evaporation rate (ether=1) | : | Not applicable |
| Other properties | : | No available data |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reacts with : Strong acids.

### 10.2. Chemical stability

SECTION 7: Handling and storage.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

SECTION 7: Handling and storage.

### 10.5. Incompatible materials

Strong acids. Materials that react violently or explosively with water.

### 10.6. Hazardous decomposition products

On burning: release of (highly) toxic gases/vapours. Nitrogen oxides (NOx).

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | |
|---|---|
| LD50 oral rat | 2335 mg/kg |

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: ca. 5

Serious eye damage/irritation : Causes serious eye damage.
pH: ca. 5

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

| Exoquat PK37 (61789-40-0, 147170-44-3 (related CAS numbers)) | |
|---|---|
| Viscosity, kinematic | ca. 47.17 mm²/s |

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

#### 11.2.2. Other information

No additional information available

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Harmful to aquatic life with long lasting effects.

| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | |
|---|---|
| LC50 - Fish [1] | 1.1 mg/l |
| EC50 - Crustacea [1] | 1.9 mg/l |
| ErC50 algae | 2.4 mg/l |

| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | |
|---|---|
| NOEC (chronic) | 0.135 mg/l |

### 12.2. Persistence and degradability

| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | |
|---|---|
| Persistence and degradability | This surfactant complies with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. |
| Biodegradation | 86 % OECD 301D |

### 12.3. Bioaccumulative potential

| Exoquat PK37 (61789-40-0, 147170-44-3 (related CAS numbers)) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | See separate substances |
| Partition coefficient n-octanol/water (Log Kow) | See separate substances |

| 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18(even numbered) and C18 unsaturated acyl) derivs., hydroxides, inner salts | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | 4.2 |

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

| Exoquat PK37 (61789-40-0, 147170-44-3 (related CAS numbers)) |
|---|
| This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII |
| This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

### 12.7. Other adverse effects

Additional information : No other effects known

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional waste regulation : Waste disposal according to EC directives 75/442/EC, 91/689/EC and 2008/98/EC in the corresponding versions, covering waste and dangerous waste.

Waste treatment methods : Do not allow to enter into surface water or drains. Product should not be released into water without pre-treatment (biological sewage plant).

Sewage disposal recommendations : If discharging to municipal sewage treatment plant, no onsite wastewater treatment required.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. This material should not be landfilled or deep well injected as a method of disposal. Recycled/recovered. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

### 14.1. UN number or ID number

| | | |
|---|---|---|
| UN-No. (ADR) | : | Not applicable |
| UN-No. (IMDG) | : | Not applicable |
| UN-No. (IATA) | : | Not applicable |
| UN-No. (ADN) | : | Not applicable |
| UN-No. (RID) | : | Not applicable |

### 14.2. UN proper shipping name

| | | |
|---|---|---|
| Proper Shipping Name (ADR) | : | Not applicable |
| Proper Shipping Name (IMDG) | : | Not applicable |
| Proper Shipping Name (IATA) | : | Not applicable |
| Proper Shipping Name (ADN) | : | Not applicable |
| Proper Shipping Name (RID) | : | Not applicable |

### 14.3. Transport hazard class(es)

**ADR**
Transport hazard class(es) (ADR) : Not applicable

**IMDG**
Transport hazard class(es) (IMDG) : Not applicable

**IATA**
Transport hazard class(es) (IATA) : Not applicable

**ADN**
Transport hazard class(es) (ADN) : Not applicable

**RID**
Transport hazard class(es) (RID) : Not applicable

### 14.4. Packing group

| | | |
|---|---|---|
| Packing group (ADR) | : | Not applicable |
| Packing group (IMDG) | : | Not applicable |
| Packing group (IATA) | : | Not applicable |
| Packing group (ADN) | : | Not applicable |
| Packing group (RID) | : | Not applicable |

### 14.5. Environmental hazards

| | | |
|---|---|---|
| Dangerous for the environment | : | No |
| Marine pollutant | : | No |
| Other information | : | No supplementary information available |

### 14.6. Special precautions for user

**Overland transport**
Not applicable

**Transport by sea**
Not applicable

**Air transport**
Not applicable

**Inland waterway transport**
Not applicable

**Rail transport**
Not applicable

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Other information, restriction and prohibition regulations : according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010. Labelling according to Regulation (EC) No. 1272/2008 [CLP]. Other regulations (EU). Not applicable.

**REACH Annex XVII (Restriction List)**

| EU restriction list (REACH Annex XVII) | |
|---|---|
| **Reference code** | **Applicable on** |
| 3(b) | Exoquat PK37 |
| 3(c) | Exoquat PK37 |

**REACH Annex XIV (Authorisation List)**

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

**REACH Candidate List (SVHC)**

Contains no substance(s) listed on the REACH Candidate List ≥ 0,1 % / SCL

**PIC Regulation (Prior Informed Consent)**

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

**POP Regulation (Persistent Organic Pollutants)**

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

**Ozone Regulation (1005/2009)**

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

**Explosives Precursors Regulation (2019/1148)**

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

**Drug Precursors Regulation (273/2004)**

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

#### 15.1.2. National regulations

To date, no national critical limit values exist.

**Germany**

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV, Annex 1).
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

**Netherlands**

SZW-lijst van kankerverwekkende stoffen : None of the components are listed
SZW-lijst van mutagene stoffen : None of the components are listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

**Denmark**

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out

## SECTION 16: Other information

| Indication of changes | | | |
|---|---|---|---|
| **Section** | **Changed item** | **Change** | **Comments** |
| 2.2 | | Modified | |

| Full text of H- and EUH-statements: | |
|---|---|
| Aquatic Chronic 3 | Hazardous to the aquatic environment – Chronic Hazard, Category 3 |
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H412 | Harmful to aquatic life with long lasting effects. |

| Full text of use descriptors | |
|---|---|
| ERC1 | Manufacture of the substance |
| ERC2 | Formulation into mixture |
| ERC4 | Use of non-reactive processing aid at industrial site (no inclusion into or onto article) |
| ERC8a | Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) |
| PC1 | Adhesives, sealants |
| PC11 | Explosives |
| PC12 | Fertilizers |
| PC13 | Fuels |
| PC14 | Metal surface treatment products |
| PC15 | Non-metal-surface treatment products |
| PC16 | Heat Transfer Fluids |
| PC17 | Hydraulic Fluids |
| PC18 | Ink and Toners |
| PC19 | Intermediate |
| PC2 | Adsorbents |
| PC20 | Metal surface treatment products |
| PC21 | Laboratory chemicals |
| PC23 | Leather treatment products |
| PC24 | Lubricants, greases, release products |
| PC25 | Metal working fluids |
| PC26 | Paper and board treatment products |
| PC27 | Plant protection products |
| PC28 | Perfumes, fragrances |

| Full text of use descriptors | |
|---|---|
| PC29 | Pharmaceuticals |
| PC3 | Air care products |
| PC30 | Photo-chemicals |
| PC31 | Polishes and wax blends |
| PC32 | Polymer preparations and compounds |
| PC33 | Semiconductors |
| PC34 | Textile dyes, and impregnating products |
| PC35 | Washing and cleaning products |
| PC36 | Water softeners |
| PC37 | Water treatment chemicals |
| PC38 | Welding and soldering products, flux products |
| PC39 | Cosmetics, personal care products |
| PC4 | Anti-Freeze and De-icing products |
| PC40 | Extraction agents |
| PC7 | Base metals and alloys |
| PC8 | Biocidal products |
| PC9a | Coatings and paints, thinners, paint removers |
| PC9b | Fillers, putties, plasters, modelling clay |
| PC9c | Finger paints |
| PROC1 | Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions |
| PROC10 | Roller application or brushing |
| PROC11 | Non industrial spraying |
| PROC12 | Use of blowing agents in manufacture of foam |
| PROC13 | Treatment of articles by dipping and pouring |
| PROC14 | Tabletting, compression, extrusion, pelettisation, granulation |
| PROC15 | Use as laboratory reagent |
| PROC17 | Lubrication at high energy conditions in metal working operations |
| PROC19 | Manual activities involving hand contact |
| PROC2 | Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions |
| PROC24 | High (mechanical) energy work-up of substances bound in /on materials and/or articles |
| PROC3 | Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition |
| PROC4 | Chemical production where opportunity for exposure arises |
| PROC5 | Mixing or blending in batch processes |
| PROC6 | Calendering operations |
| PROC7 | Industrial spraying |
| PROC8a | Transfer of substance or mixture (charging and discharging) at non-dedicated facilities |
| PROC8b | Transfer of substance or mixture (charging and discharging) at dedicated facilities |

| Full text of use descriptors | |
|---|---|
| PROC9 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |
| SU10 | Formulation [mixing] of preparations and/or re-packaging (excluding alloys) |
| SU19 | Building and construction work |
| SU21 | Consumer uses: Private households (= general public = consumers) |
| SU22 | Professional uses: Public domain (administration, education, entertainment, services, craftsmen) |
| SU3 | Industrial uses: Uses of substances as such or in preparations at industrial sites |
| SU5 | Manufacture of textiles, leather, fur |
| SU8 | Manufacture of bulk, large scale chemicals (including petroleum products) |
| SU9 | Manufacture of fine chemicals |

| Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]: | | |
|---|---|---|
| Eye Dam. 1 | H318 | Calculation method |
| Aquatic Chronic 3 | H412 | Calculation method |

Safety Data Sheet (SDS), EU

All recommendations for the use of our products, whether given by us , orally, or to be implied from data or test results obtained by us, are based on the current state of our knowledge at the time such recommendations are made. When additional information is obtained, these recommendations may be updated. They may also be influenced by circumstances outside our control. Notwithstanding such recommendations the user is responsible that the product as supplied by us, is suitable for the process or purpose he intends to use it. The user of the product is solely responsible for compliance with all laws and regulation applying to the use of the product. Since we cannot control the application, use or processing of the products, we do not accept responsibility therefore. The user shall ensure that the intended use of the products will not infringe in any party's intellectual property rights

## Annex to the safety data sheet

| Product exposure scenario(s) | |
|---|---|
| **ES Type** | **ES title** |
| Worker | Industrial manufacture of AAPB |
| Worker | Formulation and other industrial use |
| Worker | Professional use |
| Consumer | Consumer end-use of formulated products containing betaines |

## 1. Exposure scenario 1.0

| Industrial manufacture of AAPB | |
|---|---|
| ES Ref.: 1.0<br>ES Type: Worker | |

| | |
|---|---|
| Use descriptors | SU3, SU8, SU9<br>PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC12, PROC13, PROC15, PROC17, PROC19, PROC24<br>PC1, PC2, PC3, PC4, PC7, PC8, PC9a, PC9b, PC9c, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40<br>ERC1 |
| Processes, tasks, activities covered | Use at industrial sites (IS) |
| Assessment method | Used ECETOC TRA model |

## 2. Operational conditions and risk management measures

### 2.1. Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC12, PROC13, PROC15, PROC17, PROC19, PROC24)

| | |
|---|---|
| PROC1 | Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions |
| PROC2 | Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions |
| PROC3 | Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition |
| PROC4 | Chemical production where opportunity for exposure arises |
| PROC5 | Mixing or blending in batch processes |
| PROC7 | Industrial spraying |
| PROC8a | Transfer of substance or mixture (charging and discharging) at non-dedicated facilities |
| PROC8b | Transfer of substance or mixture (charging and discharging) at dedicated facilities |
| PROC9 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |
| PROC10 | Roller application or brushing |
| PROC12 | Use of blowing agents in manufacture of foam |
| PROC13 | Treatment of articles by dipping and pouring |
| PROC15 | Use as laboratory reagent |
| PROC17 | Lubrication at high energy conditions in metal working operations |
| PROC19 | Manual activities involving hand contact |
| PROC24 | High (mechanical) energy work-up of substances bound in /on materials and/or articles |

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | > 25 % |
| Dustiness | Solid, low dustiness |

| Product characteristics | |
|---|---|
| Volatility | Liquid, Low : <0,031 kPa |

| Operational conditions | | |
|---|---|---|
| Amounts used | Amounts used,(one worker) | 30 t/day |
| | Emission days | 30 |
| Frequency and duration of use | Exposure duration,(one worker) | 4 H/Day<br>ECETOC TRA. Worst case assumption |
| | Exposure frequency,(one worker) | 30 Day/Year<br>Worst case assumption |
| Other given operational conditions affecting workers exposure | Respiration volume | 10 m³/d<br>ECETOC TRA. Default value |
| | Area of skin contact | 1980 cm²<br>Worst case assumption |
| | bodyweight | 70 kg<br>ECETOC TRA. Default value |
| | Skin protection | Gloves. Effectiveness : 100%. Recommended material: Butyl rubber gloves. Nitrile rubber gloves. Breakthrough time (maximum wearing time) : > 480 min |

| Risk Management Measures | | |
|---|---|---|
| Technical conditions and measures at process level (source) to prevent release | Containment : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Technical conditions and measures to control dispersion from source towards the worker | Local exhaust : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Organisational measures to prevent/limit releases, dispersion and exposure | Good work practice : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Conditions and measures related to personal protection, hygiene and health evaluation | Type of PPE (gloves, respirator, faceshield, etc): | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| **Other risk management measures:** | | |
| Process category | Risk management target factors | |
| PROC 1 | Not required. | |
| PROC 2 | Not required. | |
| PROC 3 | 0,822672 | |
| PROC 4 | 0,467809 | |
| PROC 5 | 0,440656 | |
| PROC 7 | 0,016263 | |

| Risk Management Measures | | |
|---|---|---|
| PROC 8 | 0,220328 | |
| PROC 9 | 0,467809 | |
| PROC 10 | Not required. | |
| PROC 12 | Not required. | |
| PROC 13 | 0,220328 | |
| PROC 15 | 0,493603 | |
| PROC 17 | 0.096588 | |
| PROC 19 | Gloves. Effectiveness : 100% | |
| PROC 24 | Not required. | |
| | | |
| Exposure duration | 1 - 4 hours | |
| Exposure duration | 0,25 - 1 hours | |
| Exposure duration | < 0,25 hours | |
| Concentration: | 5 - 25% | |
| Concentration: | 1 - 5 % | |
| Concentration: | <1 % | |
| Local exhaust : | Effectiveness : 80 % | |
| Local exhaust : | Effectiveness : 90 % | |
| Local exhaust : | Effectiveness : 95 % | |
| Suitable respiratory protective equipment: | Effectiveness : 90 % | |
| Suitable respiratory protective equipment: | Effectiveness : 95 % | |
| The total risk reduction factor (TRRF) may not exceed the given risk management target factor.<br>The total risk reduction factor can be calculated by multiplying the applicable risk reduction factors (RRF). | | |

## 2.2. Contributing scenario controlling environmental exposure

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | > 25 % |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low |

| Operational conditions | | |
|---|---|---|
| Amounts used | Annual site tonnage | No data |
| Frequency and duration of use | Emission days | 30 |
| Other given operational conditions affecting environmental exposure | Fraction of applied amount lost from process/use to waste gas | Not applicable |
| | Fraction of applied amount lost from process/use to waste water | 0 g/kg<br>Recycled/recovered |
| | Fraction of applied amount lost from process/use to waste | Not applicable |

| Operational conditions | | |
|---|---|---|
| | Fraction consumed in process/use | 0 g/kg |
| | Fraction of applied amount leaving the site with products | 1 |

| Risk Management Measures | | |
|---|---|---|
| Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil | Onsite pre-treatment of waste water | Onsite wastewater treatment required |
| | Resulting fraction of initially applied amount in waste water released from site to the external sewage system | 0 g/kg<br>Recycled/recovered |
| | Air emission abatement | Not applicable |
| | Resulting fraction of applied amount in waste gas released to environment | Not applicable |
| | Onsite waste treatment | Not applicable |
| | Municipal or other type of external waste water treatment | Not applicable |
| | Effluent (of the waste water treatment plant) discharge rate | Not applicable |
| | Recovery of sludge for agriculture or horticulture | Not applicable |
| Conditions and measures related to sewage treatment plant | Not applicable | |
| Conditions and measures related to external treatment of waste for disposal | Not applicable | |
| Conditions and measures related to external recovery of waste | Not applicable | |

## 3. Exposure estimation and reference to its source

### 3.1. Health

| Information for contributing exposure scenario | |
|---|---|
| 2.1 | The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. |

### 3.2. Environment

| Information for contributing exposure scenario | |
|---|---|
| 2.2 | EUSES |

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

### 4.1. Health

| | |
|---|---|
| Guidance - Health | Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels |
| Website | http://www.ecetoc.org/tra |

### 4.2. Environment

| | |
|---|---|
| Guidance - Environment | Not applicable |
| Website | http://tcsweb3.jrc.it/euses/ |

## Additional good practice advice beyond the REACH CSA

No available data

## 1. Exposure scenario 2.0

| | Formulation and other industrial use | |
|---|---|---|
| | ES Ref.: 2.0<br>ES Type: Worker | |

| | |
|---|---|
| Use descriptors | SU5, SU10, SU19<br>PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15, PROC19<br>PC1, PC2, PC3, PC4, PC7, PC8, PC9a, PC9b, PC9c, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40<br>ERC2, ERC4 |
| Processes, tasks, activities covered | Use at industrial sites (IS) |
| Assessment method | Used ECETOC TRA model |

## 2. Operational conditions and risk management measures

### 2.1. Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15, PROC19)

| | |
|---|---|
| PROC1 | Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions |
| PROC2 | Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions |
| PROC3 | Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition |
| PROC4 | Chemical production where opportunity for exposure arises |
| PROC5 | Mixing or blending in batch processes |
| PROC6 | Calendering operations |
| PROC7 | Industrial spraying |
| PROC8a | Transfer of substance or mixture (charging and discharging) at non-dedicated facilities |
| PROC8b | Transfer of substance or mixture (charging and discharging) 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 | Tabletting, compression, extrusion, pelettisation, granulation |
| PROC15 | Use as laboratory reagent |
| PROC19 | Manual activities involving hand contact |

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | > 25 % |
| | Worst case assumption |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low : <0,031 kPa |

| Operational conditions | | |
|---|---|---|
| Amounts used | Amounts used,(one worker) | > 6 t/day<br>Worst case assumption |
| | Annual site tonnage | 1800 T<br>Worst case assumption |
| Frequency and duration of use | Exposure duration,(one worker) | > 4 H/Day<br>Worst case assumption |
| | Exposure frequency,(one worker) | 300 Day/Year<br>Worst case assumption |
| | Emission days | 300 Day/Year<br>spERC AISE 7 |
| Other given operational conditions affecting workers exposure | Respiration volume | 10 m³/d<br>ECETOC TRA. Default value |
| | Area of skin contact | 1730 cm²<br>Worst case assumption |
| | bodyweight | 70 kg<br>ECETOC TRA. Default value |
| | Skin protection | Gloves. Effectiveness : 100%. Recommended material: Butyl rubber gloves. Nitrile rubber gloves. Breakthrough time (maximum wearing time) : > 480 min |

| Risk Management Measures | | |
|---|---|---|
| Technical conditions and measures at process level (source) to prevent release | Containment : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Technical conditions and measures to control dispersion from source towards the worker | Local exhaust : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Organisational measures to prevent/limit releases, dispersion and exposure | Good work practice : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Conditions and measures related to personal protection, hygiene and health evaluation | Type of PPE (gloves, respirator, faceshield, etc): | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| **Other risk management measures:** | | |
| Process category | Risk management target factors | |
| PROC 1 | Not required. | |
| PROC 2 | Not required. | |
| PROC 3 | 0,822672 | |
| PROC 4 | 0,467809 | |
| PROC 5 | 0,440656 | |
| PROC 6 | 0,386352 | |
| PROC 7 | 0,016263 | |

| Risk Management Measures | | |
|---|---|---|
| PROC 8 | 0,220328 | |
| PROC 9 | 0,467809 | |
| PROC 10 | Not required. | |
| PROC 13 | 0,220328 | |
| PROC 14 | 0,481385 | |
| PROC 15 | 0,493603 | |
| PROC 19 | Gloves. Effectiveness : 100% | |
| | | |
| Exposure duration | 1 - 4 hours | |
| Exposure duration | 0,25 - 1 hours | |
| Exposure duration | < 0,25 hours | |
| Concentration: | 5 - 25% | |
| Concentration: | 1 - 5 % | |
| Concentration: | <1 % | |
| Local exhaust : | Effectiveness : 80 % | |
| Local exhaust : | Effectiveness : 90 % | |
| Local exhaust : | Effectiveness : 95 % | |
| Suitable respiratory protective equipment: | Effectiveness : 90 % | |
| Suitable respiratory protective equipment: | Effectiveness : 95 % | |
| The total risk reduction factor (TRRF) may not exceed the given risk management target factor.<br>The total risk reduction factor can be calculated by multiplying the applicable risk reduction factors (RRF). | | |

## 2.2. Contributing scenario controlling environmental exposure

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | > 25 % |
| | Worst case assumption |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low |

| Operational conditions | | |
|---|---|---|
| Amounts used | Annual site tonnage | 1800 T<br>Worst case assumption |
| Frequency and duration of use | Emission days | 300<br>spERC AISE 7 |
| Other given operational conditions affecting environmental exposure | Fraction of applied amount lost from process/use to waste gas | Not applicable |
| | Fraction of applied amount lost from process/use to waste water | 0.1 g/kg<br>spERC AISE 7 |
| | Fraction of applied amount lost from process/use to waste | Not applicable |

| Operational conditions | | |
|---|---|---|
| | Fraction consumed in process/use | 0 g/kg |
| | Fraction of applied amount leaving the site with products | 1 |

| Risk Management Measures | | |
|---|---|---|
| Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil | Onsite pre-treatment of waste water | Not applicable |
| | Resulting fraction of initially applied amount in waste water released from site to the external sewage system | 0.1 g/kg<br>spERC AISE 7 |
| | Air emission abatement | Not applicable |
| | Resulting fraction of applied amount in waste gas released to environment | Not applicable |
| | Onsite waste treatment | Not applicable |
| | Municipal or other type of external waste water treatment | |
| | Effluent (of the waste water treatment plant) discharge rate | 2000 m³/d |
| | Recovery of sludge for agriculture or horticulture | |
| Conditions and measures related to sewage treatment plant | Release to municipal sewage treatment plant : | 0.0006 t/day<br>Worst case assumption |
| Conditions and measures related to external recovery of waste | Recovery of sludge for agriculture or horticulture | |

## 3. Exposure estimation and reference to its source

### 3.1. Health

| Information for contributing exposure scenario | |
|---|---|
| 2.1 | The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. |

### 3.2. Environment

| Information for contributing exposure scenario | |
|---|---|
| 2.2 | EUSES |

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

### 4.1. Health

| | |
|---|---|
| Guidance - Health | Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels |
| Website | http://www.ecetoc.org/tra |

### 4.2. Environment

| | |
|---|---|
| Guidance - Environment | Not applicable |

| | |
|---|---|
| Website | http://tcsweb3.jrc.it/euses/ |

## Additional good practice advice beyond the REACH CSA

No available data

## 1. Exposure scenario 3.0

| | Professional use | |
|---|---|---|
| | ES Ref.: 3.0<br>ES Type: Worker | |

| | |
|---|---|
| Use descriptors | SU22<br>PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19<br>PC1, PC2, PC3, PC4, PC7, PC8, PC9a, PC9b, PC9c, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40<br>ERC8a |
| Processes, tasks, activities covered | Use at industrial sites (IS) |
| Assessment method | Used ECETOC TRA model |

## 2. Operational conditions and risk management measures

### 2.1. Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19)

| | |
|---|---|
| PROC1 | Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions |
| PROC2 | Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions |
| PROC3 | Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition |
| PROC4 | Chemical production where opportunity for exposure arises |
| PROC5 | Mixing or blending in batch processes |
| PROC8a | Transfer of substance or mixture (charging and discharging) at non-dedicated facilities |
| PROC8b | Transfer of substance or mixture (charging and discharging) at dedicated facilities |
| PROC10 | Roller application or brushing |
| PROC11 | Non industrial spraying |
| PROC13 | Treatment of articles by dipping and pouring |
| PROC15 | Use as laboratory reagent |
| PROC19 | Manual activities involving hand contact |

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | > 25 % |
| | Worst case assumption |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low : <0,031 kPa |

| Operational conditions | | |
|---|---|---|
| Amounts used | Amounts used,(one worker) | 0.0016 t/day<br>Worst case assumption |

| Operational conditions | | |
|---|---|---|
| | Annual site tonnage | 0.482 T<br>Worst case assumption |
| Frequency and duration of use | Exposure duration,(one worker) | > 4 H/Day<br>Worst case assumption |
| | Exposure frequency,(one worker) | 300 Day/Year<br>Worst case assumption |
| | Emission days | 365 Day/Year<br>EUSES/ECHA R16 |
| Other given operational conditions affecting workers exposure | Respiration volume | 10 m³/d<br>ECETOC TRA. Default value |
| | Area of skin contact | 1730 cm²<br>Worst case assumption |
| | bodyweight | 70 kg<br>ECETOC TRA. Default value |
| | Skin protection | Gloves. Effectiveness : 100%. Recommended material: Butyl rubber gloves. Nitrile rubber gloves. Breakthrough time (maximum wearing time) : > 480 min |

| Risk Management Measures | | |
|---|---|---|
| Technical conditions and measures at process level (source) to prevent release | Containment : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Technical conditions and measures to control dispersion from source towards the worker | Local exhaust : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Organisational measures to prevent/limit releases, dispersion and exposure | Good work practice : Required | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| Conditions and measures related to personal protection, hygiene and health evaluation | Type of PPE (gloves, respirator, faceshield, etc): | Applicability and effectiveness depends on process category and risk management target factor to be met. |
| **Other risk management measures:** | | |
| Process category | Risk management target factors | |
| PROC 1 | Not required. | |
| PROC 2 | 0,489531 | |
| PROC 3 | 0,822672 | |
| PROC 4 | 0,233904 | |
| PROC 5 | 0,220328 | |
| PROC 8 | 0,088131 | |
| PROC 10 | Not required. | |
| PROC 11 | 0,003535 | |

| Risk Management Measures | | |
|---|---|---|
| PROC 13 | 0,220328 | |
| PROC 15 | 0,493603 | |
| PROC 19 | Reduction of potentially exposed skin surface. | |
| | | |
| Exposure duration | 1 - 4 hours | |
| Exposure duration | 0,25 - 1 hours | |
| Exposure duration | < 0,25 hours | |
| Concentration: | 5 - 25% | |
| Concentration: | 1 - 5 % | |
| Concentration: | <1 % | |
| Local exhaust : | Effectiveness : 80 % | |
| Local exhaust : | Effectiveness : 90 % | |
| Local exhaust : | Effectiveness : 95 % | |
| Suitable respiratory protective equipment: | Effectiveness : 90 % | |
| Suitable respiratory protective equipment: | Effectiveness : 95 % | |
| The total risk reduction factor (TRRF) may not exceed the given risk management target factor.<br>The total risk reduction factor can be calculated by multiplying the applicable risk reduction factors (RRF). | Exposure duration (1-4 h) 0,6 x Concentration (1-5%)<br>0,2 = 0,12 TRRF<br>0,12 TTRF < Risk management target factors | |

## 2.2. Contributing scenario controlling environmental exposure

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | > 25 % |
| | Worst case assumption |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low |

| Operational conditions | | |
|---|---|---|
| Amounts used | Annual site tonnage | 0.482 T<br>Worst case assumption |
| Frequency and duration of use | Emission days | 300<br>Worst case assumption |
| Other given operational conditions affecting environmental exposure | Fraction of applied amount lost from process/use to waste gas | Not applicable |
| | Fraction of applied amount lost from process/use to waste water | 1 g/kg<br>EUSES/ECHA R16 |
| | Fraction of applied amount lost from process/use to waste | Not applicable |

| Risk Management Measures | | |
|---|---|---|
| | Onsite pre-treatment of waste water | Not applicable |

| Risk Management Measures | | |
|---|---|---|
| Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil | Resulting fraction of initially applied amount in waste water released from site to the external sewage system | 1<br>EUSES/ECHA R16 |
| | Air emission abatement | Not applicable |
| | Resulting fraction of applied amount in waste gas released to environment | Not applicable |
| | Onsite waste treatment | Not applicable |
| | Municipal or other type of external waste water treatment | |
| | Effluent (of the waste water treatment plant) discharge rate | 2000 $m^3$/d<br>EUSES/ECHA R16 |
| | Recovery of sludge for agriculture or horticulture | |
| Conditions and measures related to sewage treatment plant | Release to municipal sewage treatment plant : | 0.0000132 t/day<br>Worst case assumption |
| Conditions and measures related to external recovery of waste | Recovery of sludge for agriculture or horticulture | |

## 3. Exposure estimation and reference to its source

### 3.1. Health

| Information for contributing exposure scenario | |
|---|---|
| 2.1 | The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. |

### 3.2. Environment

| Information for contributing exposure scenario | |
|---|---|
| 2.2 | Used ECETOC TRA model |

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

### 4.1. Health

| | |
|---|---|
| Guidance - Health | Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels |
| Website | http://www.ecetoc.org/tra |

### 4.2. Environment

| | |
|---|---|
| Guidance - Environment | Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels |
| Website | http://tcsweb3.jrc.it/euses/ |

## Additional good practice advice beyond the REACH CSA

No available data

## 1. Exposure scenario 4.0

| | Consumer end-use of formulated products containing betaines | |
|---|---|---|
| | ES Ref.: 4.0<br>ES Type: Consumer | |

| | |
|---|---|
| Use descriptors | SU21<br>PC1, PC3, PC8, PC31, PC35, PC39<br>ERC8a |
| Processes, tasks, activities covered | Consumer use (C) |

## 2. Operational conditions and risk management measures

### 2.1.1. Contributing scenario consumer end-use (PC1)

| | |
|---|---|
| PC1 | Adhesives, sealants |

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | Concentration of substance in product : 2 - 5 % |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low (<0.031 kPa) |

| Operational conditions | | |
|---|---|---|
| Amounts used | Regional use tonnage | 965 T<br>Data provided by industry |
| | Daily amount used per capita | 0.132 g<br>TGD Default value |
| | Emission days | 365<br>TGD Default value |
| | For each use event, covers use amounts up to : | 0,001 - 750 g<br>Data provided by industry and/or ECETOC default values |
| Frequency and duration of use | uses per day | 0,003 - 1<br>Data provided by industry and/or ECETOC default values |
| | Exposure duration | 4 - 6 H/Day<br>Data provided by industry and/or ECETOC default values |
| Other given operational conditions affecting consumers exposure | Respiration volume | 13- 20 m³/d<br>Data provided by industry and/or ECETOC default values |
| | Area of direct skin contact | 2082.5 cm²<br>AISE REACT Worst case assumption |
| | Area of indirect skin contact | 17600 cm²<br>HERA Assessment method |
| | bodyweight | 60 kg<br>AISE REACT & ECETOC TRA. Default value |

| Risk Management Measures | | |
|---|---|---|
| Conditions and measures related to information and behavioural advice to consumers | Not required | |
| Conditions and measures related to personal protection, hygiene and health evaluation | Not required | |

## 2.1.2. Contributing scenario consumer end-use (PC3)

| | |
|---|---|
| PC3 | Air care products |

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | Concentration of substance in product : max 2 % |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low (<0.031 kPa) |

| Operational conditions | | |
|---|---|---|
| Amounts used | Regional use tonnage | 965 T<br>Data provided by industry |
| | Daily amount used per capita | 0.132 g<br>TGD Default value |
| | Emission days | 365<br>TGD Default value |
| | For each use event, covers use amounts up to : | 0.0000144- 0.2 g<br>Data provided by industry.<br>ECETOC TRA & AISE C17-C18.<br>Default value |
| Frequency and duration of use | uses per day | 1- 4<br>Data provided by industry.<br>ECETOC TRA & AISE C17-C18.<br>Default value |
| | Exposure duration | 0.0083- 4 H/Day<br>Data provided by industry.<br>ECETOC TRA & AISE C17-C18.<br>Default value |
| Other given operational conditions affecting consumers exposure | Respiration volume | 13- 33 m³/d<br>Data provided by industry.<br>ECETOC TRA & AISE C17-C18.<br>Default value |
| | Area of direct skin contact | 2082.5 cm²<br>AISE REACT Worst case assumption |
| | Area of indirect skin contact | 17600 cm²<br>HERA Assessment method |
| | bodyweight | 60 kg<br>AISE REACT & ECETOC TRA.<br>Default value |

| Risk Management Measures | | |
|---|---|---|
| Conditions and measures related to information and behavioural advice to consumers | Not required | |

| Risk Management Measures | | |
|---|---|---|
| Conditions and measures related to personal protection, hygiene and health evaluation | Not required | |

### 2.1.3. Contributing scenario consumer end-use (PC8)

| | |
|---|---|
| PC8 | Biocidal products |

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | Concentration of substance in product : max 0,005 % |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low (<0.031 kPa) |

| Operational conditions | | |
|---|---|---|
| Amounts used | Regional use tonnage | 965 T<br>Data provided by industry |
| | Daily amount used per capita | 0.132 g<br>TGD Default value |
| | Emission days | 365<br>TGD Default value |
| | For each use event, covers use amounts up to : | 0.00005- 0.0015 g<br>Data provided by industry |
| Frequency and duration of use | uses per day | ≤ 0.4<br>Data provided by industry |
| | Exposure duration | 0,1 - 0.25 H/Day<br>Data provided by industry |
| Other given operational conditions affecting consumers exposure | Respiration volume | 20 m³/d<br>Data provided by industry and/or ECETOC default values |
| | Area of direct skin contact | 2082.5 cm²<br>AISE REACT Worst case assumption |
| | Area of indirect skin contact | 17600 cm²<br>HERA Assessment method |
| | bodyweight | 60 kg<br>AISE REACT & ECETOC TRA. Default value |

| Risk Management Measures | | |
|---|---|---|
| Conditions and measures related to information and behavioural advice to consumers | Not required | |
| Conditions and measures related to personal protection, hygiene and health evaluation | Not required | |

### 2.1.4. Contributing scenario consumer end-use (PC31)

| | |
|---|---|
| PC31 | Polishes and wax blends |

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |
| Concentration of substance in product | Concentration of substance in product : max 2 % |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low (<0.031 kPa) |

| Operational conditions | | |
|---|---|---|
| Amounts used | Regional use tonnage | 965 T<br>Data provided by industry |
| | Daily amount used per capita | 0.132 g<br>TGD Default value |
| | Emission days | 365<br>TGD Default value |
| | For each use event, covers use amounts up to : | 0,0004 - 10 g<br>Data provided by industry.<br>ECETOC TRA & AISE C20.<br>Default value |
| Frequency and duration of use | uses per day | 0,003- 1<br>Data provided by industry.<br>ECETOC TRA & AISE C20<br>Default value |
| | Exposure duration | 0,1 - 4 H/Day<br>Data provided by industry.<br>ECETOC TRA & AISE C20<br>Default value |
| Other given operational conditions affecting consumers exposure | Respiration volume | 20 - 33 m³/d<br>Data provided by industry.<br>ECETOC TRA & AISE C20<br>Default value |
| | Area of direct skin contact | 2082.5 cm²<br>AISE REACT Worst case assumption |
| | Area of indirect skin contact | 17600 cm²<br>HERA Assessment method |
| | bodyweight | 60 kg<br>AISE REACT & ECETOC TRA.<br>Default value |

| Risk Management Measures | | |
|---|---|---|
| Conditions and measures related to information and behavioural advice to consumers | Not required | |
| Conditions and measures related to personal protection, hygiene and health evaluation | Not required | |

## 2.1.5. Contributing scenario consumer end-use (PC35)

| | |
|---|---|
| PC35 | Washing and cleaning products |

| Product characteristics | |
|---|---|
| Physical form of product | Solid, Liquid |

| Product characteristics | |
|---|---|
| Concentration of substance in product | Concentration of substance in product : 2 - 20 %, Concentration after dilution for use : 0.02 - 15 % |
| Dustiness | Solid, low dustiness |
| Volatility | Liquid, Low (<0.031 kPa) |

| Operational conditions | | |
|---|---|---|
| Amounts used | Regional use tonnage | 965 T<br>Data provided by industry |
| | Daily amount used per capita | 0.132 g<br>TGD Default value |
| | Emission days | 365<br>TGD Default value |
| | For each use event, covers use amounts up to : | 0,0025 - 29 g<br>Data provided by industry.<br>ECETOC TRA & AISE C1-C7, C12, C15. Default value |
| Frequency and duration of use | uses per day | 0,3 - 3<br>Data provided by industry.<br>ECETOC TRA & AISE C1-C7, C12, C15 Default value |
| | Exposure duration | 0,167 - 4 H/Day<br>Data provided by industry.<br>ECETOC TRA & AISE C1-C7, C12, C15 Default value |
| Other given operational conditions affecting consumers exposure | Respiration volume | 20 - 33 m³/d<br>Data provided by industry.<br>ECETOC TRA & AISE C1-C7, C12, C15. Default value |
| | Area of direct skin contact | 2082.5 cm²<br>AISE REACT Worst case assumption |
| | Area of indirect skin contact | 17600 cm²<br>HERA Assessment method |
| | bodyweight | 60 kg<br>AISE REACT & ECETOC TRA. Default value |

| Risk Management Measures | | |
|---|---|---|
| Conditions and measures related to information and behavioural advice to consumers | Not required | |
| Conditions and measures related to personal protection, hygiene and health evaluation | Not required | |

## 3. Exposure estimation and reference to its source

### 3.1. Health

| Information for contributing exposure scenario | |
|---|---|
| 2.1.1 | ECETOC TRA consumer v3 |
| 2.1.2 | ECETOC TRA consumer v3 |

| Information for contributing exposure scenario | |
|---|---|
| 2.1.3 | ECETOC TRA consumer v3 |
| 2.1.4 | ECETOC TRA consumer v3 |
| 2.1.5 | ECETOC TRA consumer v3 |

### 3.2. Environment

No available data

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

### 4.1. Health

| | |
|---|---|
| Guidance - Health | Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels |
| Website | http://www.ecetoc.org/tra |

### 4.2. Environment

| | |
|---|---|
| Guidance - Environment | Not applicable for wide dispersive uses |

## Additional good practice advice beyond the REACH CSA

No available data