

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 26.01.2020

Version number 203

Revision: 01.03.2019

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

- 1.1 Product identifier

- Trade name Methylethylketon

- Article number: 1000452900002

- CAS Number:

78-93-3

- EC number:

201-159-0

- Index number:

606-002-00-3

- REACH-Registration number 01-2119457290-43

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

For details on the identifiable uses according to EC-regulation No. 1907/2006 see annex of this safety data sheet.

- Application of the substance / the mixture Solvents

- 1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:

Stockmeier Chemie GmbH & Co. KG

Am Stadtholz 37

D - 33609 Bielefeld

Tel.: +49/521/3037-0

- Informing department:

Product safety department. Tel.: 0049 / 521 / 3037-162, 3037-311 or 3037-328

E-mail: ehs-bielefeld@stockmeier.de

- 1.4 Emergency telephone number:

National Poisons Information Service (NPIS) - Emergency call (healthcare professionals): (+44) 844 892 0111 - 0344 892 0111

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture

- Classification according to Regulation (EC) No 1272/2008

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.

- 2.2 Label elements

- Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

- Hazard pictograms



GHS02 GHS07

- Signal word Danger

- Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

- Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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- P243 Take action to prevent static discharges.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P403+P235 Store in a well-ventilated place. Keep cool.
- **Additional information:**
 EUH066 Repeated exposure may cause skin dryness or cracking.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
-

SECTION 3: Composition/information on ingredients

- **3.1 Substances** 2-Butanon (Methylethylketon, MEK) CH3COC2H5
- **CAS No. Designation:**
78-93-3 2-Butanon
- **Identification no(s):**
- **EC number:** 201-159-0
- **Index number:** 606-002-00-3
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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General advice:**
Instantly remove any clothing soiled by the product.
Take affected persons into the open air.
- **After inhalation**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness bring patient into stable side position for transport.
- **After skin contact**
Instantly wash with water and soap and rinse thoroughly. If skin irritation persists, seek medical advice.
- **After eye contact**
Rinse immediately opened eye for several minutes under running water. Then consult doctor.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Information for doctor**
Dermatitis may result from prolonged or repeated exposure. Causes central nervous system depression.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.
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SECTION 5: Firefighting measures

- 5.1 Extinguishing media

- Suitable extinguishing agents

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

- For safety reasons unsuitable extinguishing agents

Water with a full water jet.

- 5.2 Special hazards arising from the substance or mixture

Can form explosive gas-air mixtures. In case of incomplete combustion carbon monoxide can arise. Fumes are heavier than air and distributed over ground. Inflammation is possible from a far distance.

Can be released in case of fire:

organic decomposition products

- 5.3 Advice for firefighters

- **Protective equipment:** Wear self-contained breathing apparatus.

- Additional information

Endangered containers in the surrounding area should be cooled with a water-hose.

Collect contaminated fire fighting water separately. It must not enter drains.

temperatureclass: T 1 (DIN 57165)

explosionclass: II A (DIN 57165)

fireclass:B

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep off unprotected persons

Extinguish naked flames. Remove flammable sources. No smoking. Avoid sparks. Avoid contact with skin, eyes and clothing. Avoid inhalation of fumes. Air contaminated rooms thoroughly. Protect against electrostatic sparks.

- 6.2 Environmental precautions:

Do not allow to enter drainage system, surface or ground water.

If large amounts are released, the authorities must be informed.

- 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Contaminated material has to be disposed as waste (see item 13).

- 6.4 Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Danger of explosion

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Prevent formation of aerosols.

Avoid repeated or long term skin contact.

- Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

- 7.2 Conditions for safe storage, including any incompatibilities

- Storage

Store in cool, dry conditions in well sealed containers.

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Protect against direct sunlight, other sources of heat and ignition.

- Requirements to be met by storerooms and containers:

Observe official regulations on storage and handling of water hazardous substances

- Information about storage in one common storage facility:

Pay attention to regulations / technical guidelines on mixed storage of flammable liquids.

- Further information about storage conditions:

Pay attention to regulations/technical rules for the storage of combustible liquids.

Store in a cool place. Heat will increase pressure and may lead to the container exploding.

- Storage class 3 (VCI - Konzept, 2007)

- 7.3 Specific end use(s) No further relevant information available.

* SECTION 8: Exposure controls/personal protection

- 8.1 Control parameters

- Components with critical values that require monitoring at the workplace:

78-93-3 METILETILCETONA (MEK)

WEL	Short-term value: 899 mg/m ³ , 300 ppm Long-term value: 600 mg/m ³ , 200 ppm Sk, BMGV
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- DNELs

Oral	DNEL (population)	31 mg/kg bw/day (Long-term, systemic effects)
Dermal	DNEL (worker)	1,161 mg/kg bw/day (Long-term, systemic effects)
	DNEL (population)	412 mg/kg bw/day (Long-term, systemic effects)
Inhalative	DNEL (worker)	600 mg/m ³ (Long-term, systemic effects)
	DNEL (population)	106 mg/m ³ (Long-term, systemic effects)

- PNECs

PNEC water	55.8 mg/l (freshwater)
	55.8 mg/l (marine water)
PNEC sediment	284.74 mg/kg dw (freshwater)
	284.7 mg/kg dw (marine water)
PNEC soil	22.5 mg/kg dw (soil)
PNEC STP	709 mg/l (sewage plant)

- Ingredients with biological limit values:

78-93-3 METILETILCETONA (MEK)

BMGV	70 µmol/L Medium: urine Sampling time: post shift Parameter: butan-2-one
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- Additional information: The lists that were valid during the compilation were used as basis.

- 8.2 Exposure controls

- Personal protective equipment

- General protective and hygienic measures

Keep away from food, beverages and fodder.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

Gases, fumes and aerosols should not be inhaled.

Do not eat, drink or smoke while working.

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- Breathing equipment:

Use breathing protection in case of insufficient ventilation.

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

- Recommended filter device for short term use:

Gas filter unit according to EN 14387 typ A (organic vapours/steam, boiling point > 65°C) - code colour brown.

- Protection of hands: Solvent resistant gloves**- Material of gloves**

Butyl rubber, BR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection: Tightly sealed safety glasses.**- Body protection:**

Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties**- General Information****- Appearance:**

Form:	Fluid
Colour:	Colourless

- Smell:	Characteristic
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- Odour threshold:	Not determined
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- pH-value (100 g/l) at 20 °C:	6.4
- Melting point/freezing point:	-86 °C
- Initial boiling point and boiling range:	79-80.5 °C (DIN 53171)

- Flash point:	-4 °C (DIN 51748)
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- Ignition temperature:	514 °C (DIN 51794)
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- Decomposition temperature:	Not determined
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- Self-inflammability:	Product is not selfigniting.
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- Explosive properties:	Product is not explosive. However, formation of explosive air/steam mixtures is possible. May form explosive peroxides.
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- Critical values for explosion:

Lower:	1.5 Vol %
Upper:	11.5 Vol %

- Vapour pressure at 20 °C:	126 hPa
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- Density at 20 °C	0.804-0.807 g/cm ³ (DIN 51757)
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- Relative density	Not determined
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- Vapour density	Not determined
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- Evaporation rate	Not determined
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- Solubility in / Miscibility with Water at 20 °C:	270 g/l
- Partition coefficient: n-octanol/water:	0.3 log POW
- Viscosity:	
dynamic at 20 °C:	0.40 mPas (DIN 53015)
kinematic:	Not determined
- 9.2 Other information	No further relevant information available.
- molecular weight (weight average/Mw):	72,12 g/mol

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
Can be distilled without decomposing at normal pressure
To avoid: warmth, flames, sparks
- **10.3 Possibility of hazardous reactions**
Forms explosive gas mixture with air
Used empty containers may contain product gases which form explosive mixtures with air
Possible formation of peroxide
Reacts with oxidizing agents
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
strong oxidizing agents
Strong bases
Strong acids
- **10.6 Hazardous decomposition products:**
Formation of carbon monoxide and carbon dioxide in case of fire.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	3,300 mg/kg (rat)
Dermal	LD50	5,000 mg/kg (rbt)
Inhalative	LC 50 / 4 h	34.5 mg/l (rat) 40 mg/l (mus)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Prolonged/repeated skin contact may cause defatting, dryness and other skin complaints and inflammations (dermatitis).
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Subacute to chronic toxicity:** Can lead to liver damage

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- Additional toxicological information:

High exposures can cause drowsiness and dizziness. Respiratory and eye irritant. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

- Germ cell mutagenicity Based on available data, the classification criteria are not met.

- Carcinogenicity Based on available data, the classification criteria are not met.

- Reproductive toxicity Based on available data, the classification criteria are not met.

- STOT-single exposure

May cause drowsiness or dizziness.

- STOT-repeated exposure Based on available data, the classification criteria are not met.

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

SECTION 12: Ecological information

- 12.1 Toxicity**- Aquatic toxicity:**

LC 50 / 96 h	>3,000 mg/l (fish)
EC 50 / 48 h	1,382 mg/l (Daphnia)

- 12.2 Persistence and degradability

Oxidises rapidly by photo-chemical reactions in air.

The product is readily biodegradable.

- 12.3 Bioaccumulative potential No bioaccumulation

- 12.4 Mobility in soil No further relevant information available.

- Additional ecological information:**- General notes:**

Do not allow to enter drainage system, surface or ground water

Water hazard class 1 (Assessment by list): slightly hazardous for water.

- 12.5 Results of PBT and vPvB assessment

- PBT: Not applicable.

- vPvB: Not applicable.

- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods

The following advice is related to new material and not to any processed products. In case of a mixture with other products other disposal methods may become necessary. If in doubt seek advice from product supplier or from local authorities.

- Recommendation

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Waste disposal key number:

Since 01/01/99 the waste code numbers have not only been product-related but are also essentially application-related. The valid waste code number of the application can be obtained from the European waste catalogue.

- Uncleaned packagings: Disposal must be made according to official regulations.

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- Recommendation:

After complete emptying and cleaning, send to be reconditioned or recycled.

Rented packaging: After optimal emptying, close immediately and return to the supplier without cleaning.

Care should be taken that no other materials get into the packaging.

Other containers: After complete emptying and cleaning, send to be reconditioned or recycled.

Caution: Leftovers in the containers may cause the risk of explosion.

Uncleaned containers should not be perforated, cut or welded.

SECTION 14: Transport information

- 14.1 UN-Number - ADR, IMDG, IATA	UN1193
- 14.2 UN proper shipping name - ADR - IMDG, IATA	1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE) ETHYL METHYL KETONE (METHYL ETHYL KETONE)
- 14.3 Transport hazard class(es) - ADR - Class - Label	3 (F1) Flammable liquids. 3
- IMDG, IATA - Class - Label	3 Flammable liquids. 3
- 14.4 Packing group - ADR, IMDG, IATA	II
- 14.5 Environmental hazards: - Marine pollutant:	No
- 14.6 Special precautions for user - Kemler Number: - EMS Number: - Stowage Category	Warning: Flammable liquids. 33 F-E,S-D B
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
- Transport/Additional information: - ADR - Limited quantities (LQ) - Excepted quantities (EQ) - Transport category - Tunnel restriction code	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml 2 D/E
- IMDG - Limited quantities (LQ)	1L

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- Excepted quantities (EQ)	Código E4 Cantidad neta máxima por envase interior: 30 ml. Cantidad neta máxima por embalaje exterior: 500 ml.
- UN "Model Regulation":	UN 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

- **Hazard pictograms**



GHS02 GHS07

- **Signal word** Danger

- **Hazard statements**

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

- **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P243 Take action to prevent static discharges.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

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

- **Directive 2012/18/EU**

- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5.000 t

- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50.000 t

- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 40

- **National regulations**

- **Information about limitation of use:**

Employment restrictions concerning young persons must be observed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing data specification sheet:** see item 1: Informing department

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

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*ICAO: International Civil Aviation Organisation**LEV: Local Exhaust Ventilation**RPE: Respiratory Protective Equipment**RCR: Risk Characterisation Ratio (RCR= PEC/PNEC)**ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonized System of Classification and Labelling of Chemicals**CLP: Classification, Labelling and Packaging (Regulation (EC) No. 1272/2008)**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**TRGS: Technische Regeln für Gefahrstoffe (Technical Rules for Dangerous Substances, BAuA, Germany)**DNEL: Derived No-Effect Level (REACH)**PNEC: Predicted No-Effect Concentration (REACH)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**vPvB: very Persistent and very Bioaccumulative**Flam. Liq. 2: Flammable liquids – Category 2**Eye Irrit. 2: Serious eye damage/eye irritation – Category 2**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3***- * Data compared to the previous version altered.****- ANNEX****Exposure Scenarios:***Distribution of the substance**Formulation and (re)packing of substances and mixtures**Uses in Coatings**Use in cleaning agents**Lubricants**Metal working fluids / rolling oils**Use as binders and release agents**Environmental and agricultural use**Use for water treatment**Where appropriate for industry, commerce and consumers*

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Annex: Exposure scenario 1

- **Short title of the exposure scenario** *Distribution of the substance*
 - **Sector of Use**
 - SU3 *Industrial uses: Uses of substances as such or in preparations at industrial sites*
 - SU8 *Manufacture of bulk, large scale chemicals (including petroleum products)*
 - SU9 *Manufacture of fine chemicals*
 - **Process category**
 - 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*
 - 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 mixture into small containers (dedicated filling line, including weighing)*
 - PROC15 *Use as laboratory reagent*
 - **Environmental release category**
 - ERC1 *Manufacture of the substance*
 - ERC2 *Formulation into mixture*
 - ERC3 *Formulation into solid matrix*
 - ERC4 *Use of non-reactive processing aid at industrial site (no inclusion into or onto article)*
 - ERC5 *Use at industrial site leading to inclusion into/onto article*
 - ERC6a *Use of intermediate*
 - ERC7 *Use of functional fluid at industrial site*
-
- **Conditions of use**
 - **Duration and frequency** *Covers daily exposures up to 8 hours (unless otherwise stated).*
 - **Environment** *An environmental exposure report does not exist.*
 - **Physical parameters**
 - **Physical state**
 - Fluid
 - Vapour pressure: 126 hPa (20 °C)
 - **Concentration of the substance in the mixture**
 - Includes concentrations up to: 100%
 - (unless stated differently)
-
- **Risk management measures**
 - For following contributing scenarios store substance within a closed system:*
 - General exposures (closed systems): PROC1, PROC2, PROC3*
 - For the following contributing scenarios transfer lines emptied before coupling: -, -*
 - General exposures (open systems): PROC4*
 - For following contributing scenarios no other specific measures are identified:*
 - Storage: PROC1, PROC2*
 - Process sampling: PROC3*
 - Laboratory activities: PROC15*
 - Bulk transfers: PROC8b*
 - For following contributing scenarios fill containers/cans at dedicated fill points supplied with local extract ventilation (Effektivness 90%):*
 - Drum and small package filling: PROC9*
 - For the following contributing scenarios apply access method for containers, including compressed air supply:*
 - Equipment cleaning and maintenance: PROC8a*

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- Worker protection**- Organisational protective measures** Keep good industrial hygiene.**- Personal protective measures**

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Exposure estimation The exposure estimation was carried out in accordance with ECETOC TRA.**- Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC1	0,03 mg/kg/d	0,00
PROC2	1,37 mg/kg/d	0,00
PROC3	0,34 mg/kg/d	0,00
PROC4	0,69 mg/kg/d	0,00
PROC8a	13,71 mg/kg/d	0,00
PROC8b	6,86 mg/kg/d	0,00
PROC9	0,69 mg/kg/d	0,00
PROC15	0,03 mg/kg/d	0,00

- Worker (inhalation)

Contributing Scenario	Exposure level	RCR
PROC1	0,01 ppm	0,00
PROC2	50 ppm	0,25
PROC3	100 ppm	0,49
PROC4	100 ppm	0,49
PROC15	50 ppm	0,25
PROC8b	150 ppm	0,74
PROC9	20 ppm	0,10
PROC8a	25 ppm	0,12

- Environment An environmental exposure report does not exist.

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* Annex: Exposure scenario 2

- **Short title of the exposure scenario** Formulation and (re)packing of substances and mixtures
 - **Sector of Use**
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
 - **Process category**
 - 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
 - PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 - PROC14 Tableting, compression, extrusion, pelletisation, granulation
 - PROC15 Use as laboratory reagent
 - **Environmental release category** ERC2 Formulation into mixture
-
- **Conditions of use**
 - **Duration and frequency** Covers daily exposures up to 8 hours (unless otherwise stated).
 - **Environment** An environmental exposure report does not exist.
 - **Physical parameters**
 - **Physical state**
 - Fluid
 - Vapour pressure: 126 hPa (20 °C)
 - **Concentration of the substance in the mixture**
 - Includes concentrations up to: 100%
 - (unless stated differently)
-
- **Risk management measures**
 - For following contributing scenarios store substance within a closed system:
General exposures (closed systems): PROC1, PROC2, PROC3
Storage: PROC1, PROC2
 - For following contributing scenarios no other specific measures are identified:
General exposures (open systems): PROC4
Batch processes at elevated temperatures Operation is carried out at elevated temperature (> 20°C above ambient temperature): PROC3
Process sampling: PROC3
Laboratory activities: PROC15
Bulk transfers: PROC8b
 - For following contributing scenarios fill containers/cans at dedicated fill points supplied with local extract ventilation (Effektivness 90%):
Drum and small package filling: PROC9
 - For the following contributing scenarios apply access method for containers, including compressed air supply:
Equipment cleaning and maintenance: PROC8a
 - For following contributing scenarios Drain or remove the substance before opening or maintenance of equipment. Transport lines before coupling Drain (Effectiveness: -):
Maintenance (of large systems) and machine set-up: PROC8a
 - For following contributing scenarios use drum pumps or carefully pour out container:
Manual Transfer from/pouring from containers: PROC8a

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Drum/batch transfers: PROC8b

For the following contributing scenarios wear a respirator conforming to EN140 with Type A filter or better:

Mixing operations (open systems): PROC5

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

- **Worker protection**

- **Organisational protective measures** Keep good industrial hygiene.

- **Personal protective measures**

For more information on "Personal protective equipment" see section 8 of the MSDS

- **Disposal measures**

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- **Exposure estimation** The exposure estimation was carried out in accordance with ECETOC TRA.

- **Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC1	0,03 mg/kg/d	0,00
PROC2	1,37 mg/kg/d	0,00
PROC3	0,34 mg/kg/d	0,00
PROC4	0,69 mg/kg/d	0,00
PROC5	13,71 mg/kg/d	0,00
PROC8a	13,71 mg/kg/d	0,00
PROC8b	6,86 mg/kg/d	0,00
PROC9	0,69 mg/kg/d	0,00
PROC14	3,43 mg/kg/d	0,00
PROC15	0,34 mg/kg/d	0,00

- **Worker (inhalation)**

Contributing Scenario	Exposure level	RCR
PROC1	0,01 ppm	0,00
PROC2	50 ppm	0,25
PROC3	100 ppm	0,49
PROC4	100 ppm	0,49
PROC5	25 ppm	0,12
PROC8a	50 ppm	0,25
PROC8b	150 ppm	0,74
PROC9	20 ppm	0,10
PROC14	25 ppm	0,12
PROC15	50 ppm	0,25

- **Environment** An environmental exposure report does not exist.

- **Guidance for downstream users**

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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Annex: Exposure scenario 3

- **Short title of the exposure scenario** *Uses in Coatings*
 - **Sector of Use** *SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites*
 - **Process category**
 - 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 mixture into small containers (dedicated filling line, including weighing)*
 - PROC10 Roller application or brushing*
 - PROC13 Treatment of articles by dipping and pouring*
 - PROC14 Tableting, compression, extrusion, pelletisation, granulation*
 - PROC15 Use as laboratory reagent*
 - **Environmental release category**
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)*
-
- **Conditions of use**
 - **Duration and frequency** *Covers daily exposures up to 8 hours (unless otherwise stated).*
 - **Environment** *An environmental exposure report does not exist.*
 - **Physical parameters**
 - **Physical state**
 - Fluid*
 - Vapour pressure: 126 hPa (20 °C)*
 - **Concentration of the substance in the mixture**
 - Includes concentrations up to: 100%*
 - (unless stated differently)*
 - **Other operational conditions**
 - The use assumes ≤ 20 °C above ambient temperature, if not indicated otherwise.*
-
- **Risk management measures**
 - For following contributing scenarios store substance within a closed system:*
 - General exposures (closed systems): PROC1*
 - For following contributing scenarios ensure material transports are under containment or extract ventilation. (Effectiveness (of a measure): - %):*
 - General exposure (closed systems) with sampling Use in closed systems: PROC2*
 - Film formation - air drying: PROC2*
 - Mixing operations (closed systems): PROC3*
 - For following contributing scenarios provide extract ventilation to points where emissions occur:*
 - Film formation - air drying, Indoor: PROC4*
 - Mixing in a batch process: PROC5*
 - Laboratory activities: PROC15*
 - Material transfers Drum / batch (filling and pouring from containers): PROC9*
 - Production of preparations or articles by tableting, compression, extrusion, pelettisation: PROC14*
 - For following contributing scenarios, carry out in a vented booth provided with laminar airflow:*
 - Spraying (automatic/robotic): PROC7*
 - For following contributing scenarios provide a good standard of controlled ventilation (10 to 15 air changes per hour). Wear a respirator conforming to EN140 with Type A filter or better:*

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Manual Spraying: PROC7

For the following contributing scenarios transfer lines emptied before coupling: -, -

Material transfers: PROC8a, PROC8b

For the following contributing scenarios minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings (Effectiveness: -)

Roller application or brushing: PROC10

For following contributing scenarios avoid hand contact with wet workpieces. Ventilation use to exhaust vapors from freshly coated articles / objects, with local exhaust ventilation (Effectiveness (of a measure): - %).

Treatment by dipping and pouring: PROC13

- Worker protection**- Organisational protective measures** Keep good industrial hygiene.**- Personal protective measures**

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Exposure estimation The exposure estimation was carried out in accordance with ECETOC TRA.**- Worker (dermal)**

Contributing Scenario	Exposure level	
PROC1	0,34 mg/kg/d	
PROC2	1,37 mg/kg/d	
PROC3	0,03 mg/kg/d	
PROC4	0,69 mg/kg/d	
PROC5	0,07 mg/kg/d	
PROC7	2,14 mg/kg/d	(automatic)
	42,86 mg/kg/d	(manual)
PROC8a	1,37 mg/kg/d	
PROC8b	6,86 mg/kg/d	
PROC9	0,69 mg/kg/d	
PROC10	1,37 mg/kg/d	
PROC13	0,69 mg/kg/d	
PROC14	0,34 mg/kg/d	
PROC15	0,03 mg/kg/d	

- Worker (inhalation)

Contributing Scenario	Exposure level	RCR	
PROC1	0,01 ppm	0,00	
PROC2	5 ppm	0,00	
PROC3	10 ppm	0,00	
PROC4	10 ppm	0,00	
PROC5	25 ppm	0,10	
PROC7	5 ppm	0,00	(automatic)
	15 ppm	0,10	(manual)
PROC8a	25 ppm	0,10	
PROC8b	30 ppm	0,10	
PROC9	20 ppm	0,10	
PROC10	25 ppm	0,10	
PROC13	25 ppm	0,10	
PROC14	25 ppm	0,10	
PROC15	5 ppm	0,00	

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- **Environment** An environmental exposure report does not exist.

- **Guidance for downstream users**

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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* Annex: Exposure scenario 4

- **Short title of the exposure scenario** *Uses in Coatings*
- **Sector of Use**
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Process category**
 - 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*
- **Environmental release category**
 - ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)*
 - ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)*
- **Conditions of use**
- **Duration and frequency** *Covers daily exposures up to 8 hours (unless otherwise stated).*
- **Environment** *An environmental exposure report does not exist.*
- **Physical parameters**
- **Physical state**
Fluid
Vapour pressure: 126 hPa (20 °C)
- **Concentration of the substance in the mixture**
Includes concentrations up to: 100%
(unless stated differently)
- **Other operational conditions**
The use assumes ≤ 20 °C above ambient temperature, if not indicated otherwise.
- **Other operational conditions affecting worker exposure**
Assumes a good basic standard of occupational hygiene is implemented
- **Risk management measures**
General exposures (closed systems) PROC1:
Handle substance within a closed system.

Filling / preparation equipment from drums or containers, PROC2.:
Handle substance within a closed system., Ensure that are transporting materials contained or carried out under hood.

General exposures (closed systems), use in closed systems, PROC2:
Handle substance within a closed system., Ensure that are transporting materials contained or carried out under hood.

Material preparation for use, PROC3:
minimize exposure by partial enclosure of the operation or equipment and ventilators at the openings

Film formation - air drying, indoor, PROC4:

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A good general or controlled ventilation standard to ensure (5 to 15 air changes per hour)., Provided with deductions to the emission locations.

Film formation - air drying, outside, PROC4:

not exercise activities during more than 1 hour, or.: respirator conforming to EN140 with Type A filter or better wear.

Material preparation for the application, interior, PROC5:

not exercise activities during more than 1 hour, or.: A good general or controlled ventilation standard to ensure (5 to 15 air changes per hour). Respirator conforming to EN140 with Type A filter or better wear.

Material preparation for use, outdoor, PROC5:

Respirator conforming to EN140 with Type A filter or better wear.

Material handling, barrel / batch transfers PROC8a:

not exercise activities during more than 1 hour, or.: Ensure a good general base vent. Respirator conforming to EN140 with Type A filter or better wear.

Material handling, barrel / batch transfers PROC8b:

Ensure that transfer points are fitted with exhaust ventilation.

Order with roll, splash, abundance, interior, PROC10:

A good general basic ventilation sure.

Order with roll, splash, abundance, outdoor, PROC10:

Respirator conforming to EN140 with Type A filter or better wear.

Spraying, Manual, Indoor, PROC11:

Run in vented booth or system with deduction. Respirator conforming to EN140 with Type A filter or better wear.

Spraying, Manual, Outdoor, PROC11:

not exercise activity for more than 4 hours. Respirator conforming to EN140 with Type A filter or better wear.

Dipping, immersion and pouring, interior, PROC13:

Avoid hand contact with wet workpieces. Armed with deductions to the emission locations.

Dipping, immersion and pouring, outdoor, PROC13:

Avoid hand contact with wet workpieces. Make sure that operation is performed outdoors.

Laboratory activities PROC15:

A good general or controlled ventilation standard to ensure (5 to 15 air changes per hour).

Hand job -Fingerfarben, pastels, adhesives, interior, PROC19:

A good general basic ventilation sure. Respirator conforming to EN140 with Type A filter or better wear.

Hand job -Fingerfarben, pastels, adhesives, exterior, PROC19:

Make sure that operation is performed outdoors. Respirator conforming to EN140 with Type A filter or better wear.

- Worker protection

- Organisational protective measures Keep good industrial hygiene.

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- Technical protective measures

Ensure a good standard of general ventilation. Natural ventilation is from doors, windows etc.. Controlled ventilation means the supply or exhaust air by a powered fan.

- Personal protective measures

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Exposure estimation The exposure estimation was carried out in accordance with ECETOC TRA.**- Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC1	0,34 mg/kg/d	0,00
PROC2	0,14 mg/kg/d	0,00
PROC3	0,34 mg/kg/d	0,00
PROC4	0,69 mg/kg/d	0,00 (indoor)
	6,68 mg/kg/d	0,01 (outdoor)
PROC5	13,71 mg/kg/d	0,01
PROC8a	13,71 mg/kg/d	0,01
PROC8b	0,69 mg/kg/d	0,00
PROC10	27,43 mg/kg/d	0,02
PROC11	2,14 mg/kg/d	0,00 (indoor)
	107,14 mg/kg/d	0,09 (outdoor)
PROC13	0,69 mg/kg/d	0,00 (indoor)
	13,71 mg/kg/d	0,01 (outdoor)
PROC15	0,34 mg/kg/d	0,00
PROC19	141,43 mg/kg/d	0,12 (indoor)
	84,86 mg/kg/d	0,07 (outdoor)

- Worker (inhalation)

Contributing Scenario	Exposure level	RCR
PROC1	0,1 ppm	0,00
PROC2	10 ppm	0,05
PROC3	20 ppm	0,10
PROC4	15 ppm	0,07 (indoor)
	35 ppm	0,17 (outdoor)
PROC5	30 ppm	0,15 (indoor)
	35 ppm	0,17 (outdoor)
PROC8a	30 ppm	0,15
PROC8b	25 ppm	0,12
PROC10	150 ppm	0,74 (indoor)
	35 ppm	0,17 (outdoor)
PROC11	20 ppm	0,10 (indoor)
	42 ppm	0,21 (outdoor)
PROC13	50 ppm	0,25 (indoor)
	175 ppm	0,86 (outdoor)
PROC15	15 ppm	0,07
PROC19	15 ppm	0,07 (indoor)
	35 ppm	0,17 (outdoor)

- Environment An environmental exposure report does not exist.

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- Guidance for downstream users

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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* Annex: Exposure scenario 5

- **Short title of the exposure scenario** *Use in cleaning agents*
 - **Sector of Use** *SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites*
 - **Process category**
 - 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*
 - 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*
 - PROC10 Roller application or brushing*
 - PROC13 Treatment of articles by dipping and pouring*
 - **Environmental release category**
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)*
-
- **Conditions of use**
 - **Duration and frequency** *Covers daily exposures up to 8 hours (unless otherwise stated).*
 - **Environment** *An environmental exposure report does not exist.*
 - **Physical parameters**
 - **Physical state**
 - Fluid*
 - Vapour pressure: 126 hPa (20 °C)*
 - **Concentration of the substance in the mixture**
 - Includes concentrations up to: 100%*
 - (unless stated differently)*
 - **Other operational conditions**
 - The use assumes ≤ 20 °C above ambient temperature, if not indicated otherwise.*
-
- **Risk management measures**
 - For following contributing scenarios ensure material transports are under containment or extract ventilation. (Effectiveness (of a measure): - %):*
 - Material transfers: PROC8b*
 - Filling / preparation of equipment from drums or containers: PROC8b*
 - For following contributing scenarios, a good standard of general ventilation must be ensured (not less than 3 to 5 air changes per hour) and to avoid activities involving exposure for more than 4 hour or wear a respirator conforming to EN140 with Type A filter or better:*
 - Automated process with (semi) closed systems. Use in contained systems: PROC2*
 - Application of cleaning products in closed systems: -*
 - For following contributing scenarios, a good standard of general ventilation must be ensured (not less than 3 to 5 air changes per hour) and to avoid activities involving exposure for more than 1 hour or wear a respirator conforming to EN140 with Type A filter or better:*
 - Automated process with (semi) closed systems Drum/batch transfers: PROC3*
 - For following contributing scenarios provide extract ventilation to points where emissions occur:*
 - Use in closed batch processes: PROC4*
 - Degreasing small objects in cleaning station: PROC13*
 - For following contributing scenarios, provide a good standard of controlled ventilation (10 to 15 air changes per hour), avoid carrying out activities involving exposure for more than 1 hour(s) or wear a respirator conforming to EN140 with Type A filter or better:*
 - Cleaning with low-pressure washers: PROC10*
 - Cleaning with high pressure washers: PROC7*
 - Manual Surfaces Cleaning (no spraying): PROC10*

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- Worker protection**- Organisational protective measures** Keep good industrial hygiene.**- Personal protective measures**

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Exposure estimation The exposure estimation was carried out in accordance with ECETOC TRA.**- Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC2	1,37 mg/kg/d	0,00
PROC3	0,34 mg/kg/d	0,00
PROC4	0,69 mg/kg/d	0,00
PROC7	42,86 mg/kg/d	0,04
PROC8b	0,14 mg/kg/d	0,00 (Transport)
	0,69 mg/kg/d	0,00
PROC10	27,43 mg/kg/d	0,02
PROC13	0,69 mg/kg/d	0,00

- Worker (inhalation)

Contributing Scenario	Exposure level	RCR
PROC2	30 ppm	0,15
PROC3	20 ppm	0,10
PROC4	10 ppm	0,05
PROC5	25 ppm	0,10
PROC7	30 ppm	0,15
PROC8b	30 ppm	0,15 (Transport)
	4,5 ppm	0,02
PROC10	15 ppm	0,07
PROC13	25 ppm	0,12

- Environment An environmental exposure report does not exist.**- Guidance for downstream users**Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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* Annex: Exposure scenario 6

- **Short title of the exposure scenario** *Use in cleaning agents*
- **Sector of Use**
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Process category**
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
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
- **Environmental release category**
ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)

-
- **Conditions of use**
 - **Duration and frequency** *Covers daily exposures up to 8 hours (unless otherwise stated).*
 - **Environment** *An environmental exposure report does not exist.*
 - **Physical parameters**
 - **Physical state**
Fluid
Vapour pressure: 126 hPa (20 °C)
 - **Concentration of the substance in the mixture**
Includes concentrations up to: 100%
(unless stated differently)
 - **Other operational conditions**
The use assumes ≤ 20 °C above ambient temperature, if not indicated otherwise.

-
- **Risk management measures**
*Filling / preparation equipment from drums or containers, PROC8b.:
not exercise activities during more than 1 hour, or.: Ensure a good general base vent. Respirator conforming to EN140 with Type A filter or better wear.*

*Automated process with (semi) closed systems, use in closed systems, PROC2.:
not exercise activities during more than 4 hours, or.: respirator conforming to EN140 with Type A filter or better wear.*

*Automated process with (semi) closed systems, barrel / batch transfers, use in closed systems, PROC3.:
not exercise activities during more than 1 hour, or.: respirator conforming to EN140 with Type A filter or better wear.*

*Semi-automated process. (Example: Semi-automated order of floor care products) PROC4.:
not exercise activities during more than 4 hours, or.: Ensure a good general base vent. Respirator conforming to EN140 with Type A filter or better wear.*

*Filling / preparation equipment from drums or containers, PROC8a.:
Make sure that operation is performed outdoors. Respirator conforming to EN140 with Type A filter or better wear.*

*Surfaces, cleaning, manual, immersion, immersion and pouring, PROC13:
not exercise activities during more than 4 hours, or.: Ensure a good general base vent. Respirator*

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conforming to EN140 with Type A filter or better wear.

Cleaning with low-pressure washers, rollers / brushes, no spraying PROC10:
limiting substance content in the product to 5%. A good general basic ventilation sure.

Cleaning with high-pressure scrubber, spraying, interior, PROC11:
limiting substance content in the product to 1%. A good general basic ventilation sure.

Cleaning with high pressure cleaner, spray, outdoor, PROC11:
limiting substance content in the product to 1%, not exercise activities during more than 4 hours, or...
respirator conforming to EN140 with Type A filter or better wear.

Surfaces, cleaning, manual, spraying PROC10:
not exercise activities during more than 1 hour, or.: Make sure that doors and windows are open.
Respirator conforming to EN140 with Type A filter or better wear.

Ad hoc manual order via spray guns with trigger, dipping, etc., rollers / brushes, PROC10:
Substance content in the product to 25% limit, do not exercise activities during more than 4 hours, or.:
Armed with deductions to the emission locations. Respirator conforming to EN140 with Type A filter or
better tragen. Geeignete gloves tested to EN374 wear.

Ad hoc manual order via spray guns with trigger, dipping, etc., rollers / brushes, PROC10:
Substance content in the product to 25% limit. Respirator conforming to EN140 with Type A filter or better
wear.

Application of cleaning products in closed systems, outdoor, PROC4:
not exercise activities during more than 1 hour, or.: respirator conforming to EN140 with Type A filter or
better wear.

Cleaning of medical equipment, PROC4:
not exercise activities during more than 4 hours, or.: Provided with deductions to the emission locations.
Respirator conforming to EN140 with Type A filter or better wear.

- Worker protection

- Organisational protective measures A good basic standard of workplace hygiene must be observed.

- Personal protective measures

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative
regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Exposure estimation The exposure estimation was carried out in accordance with ECETOC TRA.

- Worker (dermal)

Contributing Scenario	Exposure level	RCR
PROC8b	6,86 mg/kg/d	0,01
PROC2	1,37 mg/kg/d	0,00
PROC3	0,34 mg/kg/d	0,00
PROC4	6,86 mg/kg/d	0,01
PROC8a	13,71 mg/kg/d	0,01
PROC13	13,71 mg/kg/d	0,01
PROC10	5,49 mg/kg/d	0,00
PROC11	10,71 mg/kg/d	0,01
PROC11	10,71 mg/kg/d	0,01
PROC10	16,46 mg/kg/d	0,01

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Trade name *Methylethylketon*

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PROC10	1,65 mg/kg/d	0,00
PROC10	16,46 mg/kg/d	0,01
PROC4	6,86 mg/kg/d	0,01
PROC4	0,69 mg/kg/d	0,00

- Worker (inhalation)

Contributing Scenario	Exposure level	RCR
PROC8b	15 ppm	0,07
PROC2	30 ppm	0,15
PROC3	20 ppm	0,10
PROC4	45 ppm	0,22
PROC8a	35 ppm	0,17
PROC13	46 ppm	0,22
PROC10	30 ppm	0,15
PROC11	30 ppm	0,15
PROC11	42 ppm	0,21
PROC10	18 ppm	0,09
PROC10	36 ppm	0,18
PROC10	30 ppm	0,15
PROC4	35 ppm	0,17
PROC4	30 ppm	0,15

- **Environment** An environmental exposure report does not exist.

- Guidance for downstream users

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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Trade name **Methylethylketon**

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* Annex: Exposure scenario 7

- **Short title of the exposure scenario** Lubricants
 - **Sector of Use** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - **Process category**
 - 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
 - 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 mixture into small containers (dedicated filling line, including weighing)
 - PROC10 Roller application or brushing
 - PROC13 Treatment of articles by dipping and pouring
 - PROC17 Lubrication at high energy conditions in metal working operations
 - PROC18 General greasing /lubrication at high kinetic energy conditions
 - **Environmental release category**
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 - ERC7 Use of functional fluid at industrial site
-
- **Conditions of use**
 - **Duration and frequency** Covers daily exposures up to 8 hours (unless otherwise stated).
 - **Environment** An environmental exposure report does not exist.
 - **Physical parameters**
 - **Physical state**
 - Fluid
 - Vapour pressure: 126 hPa (20 °C)
 - **Concentration of the substance in the mixture**
 - Includes concentrations up to: 100%
 - (unless stated differently)
-
- **Risk management measures**
 - For following contributing scenarios store substance within a closed system:
General exposures (closed systems): PROC1, PROC2, PROC3
General exposures (open systems): PROC4
 - For following contributing scenarios no other specific measures are identified:
Material transfers: PROC8b
Storage: PROC1, PROC2
 - For the following contributing scenarios Transfer via enclosed lines:
Preparation of material for the application: PROC8a, PROC8b
 - For following contributing scenarios use drum pumps or carefully pour out container:
Filling / preparation of equipment from drums or containers: PROC8a, PROC8b
 - For following contributing scenarios ensure material transports are under containment or extract ventilation.
(Effectiveness (of a measure): - %):
Factory initial filling of equipment: PROC9
Treatment by dipping and pouring: PROC13
 - For the following contributing scenarios limit access area to the facilities:
Operation and lubrication of open equipment with high energy : PROC18
 - For the following contributing scenarios a sufficient measure of controlled ventilation must be ensured (10 to 15 air changes per hour):

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Trade name **Methylethylketon**

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Roller application or brushing: PROC10

For the following contributing scenarios minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings (Effectiveness: -)

Spraying: PROC7

For following contributing scenarios avoid carrying out activities involving exposure for more than 4 hours:

Maintenance of small installations: PROC8a

Recycling of rejects: PROC9

For following contributing scenarios, deduction of the emission points provide when contact with warm (> 50 °C) product is likely. Wear suitable gloves tested to EN374 wear.

Maintenance (of larger parts of businesses) and upgrading equipment: PROC8b

- **Worker protection**

- **Personal protective measures**

For more information on "Personal protective equipment" see section 8 of the MSDS

- **Disposal measures**

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- **Exposure estimation** The exposure estimation was carried out in accordance with ECETOC TRA.

- **Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC1	1,37 mg/kg/d	0,00
PROC2	1,37 mg/kg/d	0,00
PROC3	0,34 mg/kg/d	0,00
PROC4	6,86 mg/kg/d	0,00
PROC7	2,14 mg/kg/d	0,00
PROC8a	13,71 mg/kg/d	0,01
PROC8b	6,86 mg/kg/d	0,01
PROC9	1,37 mg/kg/d	0,00
PROC10	27,43 mg/kg/d	0,02
PROC13	1,37 mg/kg/d	0,00
PROC17	27,43 mg/kg/d	0,00
PROC18	13,71 mg/kg/d	0,00

- **Worker (inhalation)**

Contributing Scenario	Exposure level	RCR
PROC1	50 ppm	0,25
PROC2	50 ppm	0,25
PROC3	100 ppm	0,49
PROC4	100 ppm	0,49
PROC7	50 ppm	0,25
PROC8a	150 ppm	0,74
PROC8b	150 ppm	0,74
PROC9	120 ppm	0,59
PROC10	75 ppm	0,37
PROC13	125 ppm	0,61
PROC17	100 ppm	0,49
PROC18	100 ppm	0,49

- **Environment** An environmental exposure report does not exist.

- **Guidance for downstream users**

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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Trade name **Methylethylketon**

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* Annex: Exposure scenario 8

- **Short title of the exposure scenario** Metal working fluids / rolling oils
 - **Sector of Use** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - **Process category**
 - 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 mixture into small containers (dedicated filling line, including weighing)
 - PROC10 Roller application or brushing
 - PROC13 Treatment of articles by dipping and pouring
 - PROC17 Lubrication at high energy conditions in metal working operations
 - **Environmental release category**
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
-
- **Conditions of use**
 - **Duration and frequency** Covers daily exposures up to 8 hours (unless otherwise stated).
 - **Environment** An environmental exposure report does not exist.
 - **Physical parameters**
 - **Physical state**
 - Fluid
 - Vapour pressure: 126 hPa (20 °C)
 - **Concentration of the substance in the mixture**
 - Includes concentrations up to: 100%
 - (unless stated differently)
-
- **Risk management measures**
 - For following contributing scenarios store substance within a closed system:
General exposures (closed systems): PROC1, PROC2, PROC3
Storage: PROC1, PROC2
 - For following contributing scenarios no other specific measures are identified:
General exposures (open systems): PROC4
Equipment cleaning and maintenance: PROC8b
 - For following contributing scenarios use drum pumps or carefully pour out container:
Preparation of material for the application: PROC8a, PROC8b, PROC5, PROC9
 - For the following contributing scenarios ensure enhanced general ventilation by mechanical means:
Treatment by dipping and pouring: PROC13
Roller application or brushing: PROC10
 - For the following contributing scenarios minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings (Effectiveness: -)
Spraying: PROC7
Semiautomatic for metals and metal forming: PROC17
 - For following contributing scenarios handle substance in a predominantly closed system provided with extract ventilation:
Automated metal rolling / forming: PROC2
 - For the following contributing scenarios limit access area to the facilities:
Provide extraction ventilation at points where emissions occur. (Effectiveness -%): -

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Trade name **Methylethylketon**

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Mechanical metalwork: PROC17

For following contributing scenarios using dedicated equipment:

Process sampling: PROC8b

For following contributing scenarios activity not for more than 1 hour. provide with a mechanically enhanced general ventilation., or ;, Ensure that operation outdoors is performed., empty transfer lines before decoupling .:

Large Volume transports: PROC8b

For following contributing scenarios provide a mechanically enhanced general ventilation, Drain or remove substance from penetration or maintenance of the facility.:

Equipment cleaning and maintenance, non-dedicated facility: PROC8a

- **Worker protection**

- **Personal protective measures**

For more information on "Personal protective equipment" see section 8 of the MSDS

- **Disposal measures**

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- **Exposure estimation** The exposure estimation was carried out in accordance with ECETOC TRA.

- **Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC1	1,37 mg/kg/d	0,00
PROC2	1,37 mg/kg/d	0,00
PROC3	0,34 mg/kg/d	0,00
PROC4	6,86 mg/kg/d	0,01
PROC5	2,74 mg/kg/d	0,00
PROC7	2,14 mg/kg/d	0,00
PROC8a	13,71 mg/kg/d	0,01
PROC8b	6,86 mg/kg/d	0,01
PROC9	6,86 mg/kg/d	0,01
PROC10	5,49 mg/kg/d	0,00
PROC13	2,74 mg/kg/d	0,00
PROC17	27,43 mg/kg/d	0,00

- **Worker (inhalation)**

Contributing Scenario	Exposure level	RCR
PROC1	50 ppm	0,25
PROC2	50 ppm	0,25
PROC3	100 ppm	0,49
PROC4	100 ppm	0,49
PROC5	50 ppm	0,25
PROC7	50 ppm	0,25
PROC8a	75 ppm	0,37
PROC8b	150 ppm	0,74
PROC9	40 ppm	0,21
PROC10	75 ppm	0,37
PROC13	75 ppm	0,37
PROC17	20 ppm	0,10

- **Environment** An environmental exposure report does not exist.

- **Guidance for downstream users**

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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Trade name **Methylethylketon**

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* Annex: Exposure scenario 9

- Short title of the exposure scenario

Use as binders and release agents
Industrial

- Sector of Use SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

- Process category

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

PROC6 Calendering operations

PROC7 Industrial spraying

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC10 Roller application or brushing

PROC13 Treatment of articles by dipping and pouring

PROC14 Tableting, compression, extrusion, pelletisation, granulation

- Environmental release category

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

- Conditions of use

- Duration and frequency Covers daily exposures up to 8 hours (unless otherwise stated).

- Environment An environmental exposure report does not exist.

- Physical parameters

- Physical state

Fluid

Vapour pressure: 126 hPa (20 °C)

- Concentration of the substance in the mixture

Includes concentrations up to: 100%
(unless stated differently)

- Risk management measures

For following contributing scenarios a sufficient degree of controlled ventilation must be ensured (10 to 15 air changes per hour). In closed conduits reload.:

Material transfers (closed systems): PROC1, PROC2, PROC3

For the following contributing scenarios a sufficient measure of controlled ventilation must be ensured (10 to 15 air changes per hour):

Mixing operations (closed systems): PROC3

For following contributing scenarios no other specific measures are identified:

Mixing operations (open systems): PROC4

For following contributing scenarios provide extract ventilation to points where emissions occur:

Production in molds: PROC14

Roller application or brushing: PROC10

For the following contributing scenarios minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings (Effectiveness: -)

Spraying (automatic/robotic): PROC7

For following contributing scenarios applies execute with local exhaust ventilation (-% Effectiveness (of a measure)) in vented cabin or conditioning with deduction.:

Manual Spraying: PROC7

For following contributing scenarios Store substance within a closed system:

Storage: PROC1, PROC2

For following contributing scenarios materials directly reload in mixing tank ..:

Drum / batch transfers: PROC8b

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Trade name Methylethylketon

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For following contributing scenarios with deductions provided to the emission locations. Respirator conforming to EN140 with Type A filter or better wear .:

Moulding, (open systems): PROC6

- Worker protection

- Personal protective measures

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Exposure estimation The exposure estimation was carried out in accordance with ECETOC TRA.

- Worker (dermal)

Contributing Scenario	Exposure level	RCR
PROC1	0,14 mg/kg/d	0,00
PROC2	0,14 mg/kg/d	0,00
PROC3	0,03 mg/kg/d	0,00
PROC4	0,69 mg/kg/d	0,00
PROC6	1,37 mg/kg/d	0,00
PROC7	8,57 mg/kg/d	0,01
PROC8b	0,69 mg/kg/d	0,00
PROC10	1,37 mg/kg/d	0,00
PROC14	0,34 mg/kg/d	0,00

- Worker (inhalation)

Contributing Scenario	Exposure level	RCR
PROC1	100 ppm	0,49
PROC2	100 ppm	0,49
PROC3	100 ppm	0,49
PROC4	100 ppm	0,49
PROC6	25 ppm	0,12
PROC7	25 ppm	0,12
PROC8b	150 ppm	0,74
PROC10	25 ppm	0,12
PROC14	25 ppm	0,12

- Environment An environmental exposure report does not exist.

- Guidance for downstream users

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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Trade name **Methylethylketon**

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* Annex: Exposure scenario 10

- Short title of the exposure scenario

Use as binders and release agents
Industrial

- Sector of Use

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

- Process category

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

PROC6 Calendering operations

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

PROC14 Tableting, compression, extrusion, pelletisation, granulation

- Environmental release category

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

- Conditions of use

- **Duration and frequency** Covers daily exposures up to 8 hours (unless otherwise stated).

- **Environment** An environmental exposure report does not exist.

- Physical parameters

- Physical state

Fluid

Vapour pressure: 126 hPa (20 °C)

- Concentration of the substance in the mixture

Includes concentrations up to: 100%
(unless stated differently)

- Risk management measures

For following contributing scenarios Store substance within a closed system:

Use in closed batch processes: PROC1, PROC2

For the following contributing scenarios Transfer via enclosed lines:

Material transfers (closed systems): PROC1, PROC2, PROC3

For following contributing scenarios use drum pumps or carefully pour out container:

Material transfers Drum / batch (filling and pouring from containers): PROC8b

For following contributing scenarios store substance within a closed system:

Mixing operations (open systems): PROC3

For the following contributing scenarios minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings (Effectiveness: -)

Mixing operations (closed systems): PROC4

Production in molds: PROC14

Roller application or brushing: PROC10

Provide extraction ventilation at points where emissions occur. (Effectiveness -%): -

Moulding (open systems): PROC6

Carry out in a fully closed cabin with independent exhaust ventilation. (-)

Spraying (automatic/robotic): PROC11

For following contributing scenarios carry out in a vented booth or extracted housing :

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Trade name **Methylethylketon**

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Manual Spraying: PROC11

- Worker protection**- Personal protective measures**

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Exposure estimation The exposure estimation was carried out in accordance with ECETOC TRA.**- Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC1	0,14 mg/kg/d	0,00
PROC2	0,14 mg/kg/d	0,00
PROC3	0,03 mg/kg/d	0,00
PROC4	0,69 mg/kg/d	0,00
PROC6	1,37 mg/kg/d	0,00
PROC8b	6,86 mg/kg/d	0,01
PROC10	1,37 mg/kg/d	0,00
PROC11	2,14 mg/kg/d	0,00
PROC14	0,34 mg/kg/d	0,00

- Worker (inhalation)

Contributing Scenario	Exposure level	RCR
PROC1	100 ppm	0,49
PROC2	100 ppm	0,49
PROC3	100 ppm	0,49
PROC4	25 ppm	0,12
PROC6	100 ppm	0,49
PROC8b	50 ppm	0,25
PROC10	50 ppm	0,25
PROC11	200 ppm	0,98
PROC14	50 ppm	0,25

- Environment An environmental exposure report does not exist.**- Guidance for downstream users**Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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Trade name **Methylethylketon**

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* Annex: Exposure scenario 11

- Short title of the exposure scenario

*Environmental and agricultural use**Professional*

- Sector of Use

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

- Process category

*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**PROC4 Chemical production where opportunity for exposure arises**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**PROC11 Non industrial spraying**PROC13 Treatment of articles by dipping and pouring*

- Environmental release category

*ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)*

- Conditions of use

- Duration and frequency *Covers daily exposures up to 8 hours (unless otherwise stated).*

- Environment *An environmental exposure report does not exist.*

- Physical parameters

- Physical state

*Fluid**Vapour pressure: 126 hPa (20 °C)*

- Concentration of the substance in the mixture

*Includes concentrations up to: 100%**(unless stated differently)*

- Risk management measures

*For following contributing scenarios Store substance within a closed system:**Storage: PROC1, PROC2**For following contributing scenarios ensure operation is undertaken outdoors:**Manual Transfer from/pouring from containers: PROC8b**Mixing operations (open systems): PROC4**For following contributing scenarios ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better:**Ad hoc manual application via trigger sprays, dipping, rolling, brushing, etc.: PROC13**For following contributing scenarios ensure breathing apparatus with full face mask according to EN140 with Type A filter or better wear .:**Manual spray / mist application: PROC11**For following contributing scenarios, applied with pressure and a protection factor of > 20 ventilated box with filtered air .:**Mechanical spray / mist application: PROC11**For following contributing scenarios ensure not exercise activities during more than 1 hour., Limiting the substance content in the product to 25%., Chemical protective gloves (tested to EN374) in combination with a basic training employees .:**Operation of equipment containing engine oil and the like: PROC8a**For following exercise contributing scenarios ensure activity not for more than 1 hour., limiting the substance content in the product to 25%. Make sure that operation is performed outdoors. Wear suitable gloves tested to EN374 wear.**Waste: PROC8a*

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Trade name Methylethylketon

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- Worker protection**- Personal protective measures**

Using appropriate chemical resistant gloves.

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Exposure estimation The exposure estimation was carried out in accordance with ECETOC TRA.**- Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC1	0,14 mg/kg/d	0,00
PROC2	0,14 mg/kg/d	0,00
PROC4	1,37 mg/kg/d	0,00
PROC8a	2,74 mg/kg/d	0,00
PROC8b	6,86 mg/kg/d	0,01
PROC11	107,14 mg/kg/d	0,09
PROC13	2,74 mg/kg/d	0,00

- Worker (inhalation)

Contributing Scenario	Exposure level	RCR
PROC1	50 ppm	0,25
PROC2	50 ppm	0,25
PROC4	175 ppm	0,86
PROC8a	100 ppm	0,49
PROC8b	175 ppm	0,86
PROC11	30 ppm	0,15
PROC13	25 ppm	0,12

- Environment An environmental exposure report does not exist.**- Guidance for downstream users**Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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Trade name **Methylethylketon**

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* Annex: Exposure scenario 12

- Short title of the exposure scenario

Use for water treatment

Industrial

- Sector of Use SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

- Process category

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

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

PROC13 Treatment of articles by dipping and pouring

- Environmental release category ERC3 Formulation into solid matrix

- Conditions of use

- Duration and frequency Covers daily exposures up to 8 hours (unless otherwise stated).

- Environment An environmental exposure report does not exist.

- Physical parameters

- Physical state

Fluid

Vapour pressure: 126 hPa (20 °C)

- Concentration of the substance in the mixture

Includes concentrations up to: 100%

(unless stated differently)

- Risk management measures

For following contributing scenarios Store substance within a closed system:

Storage: PROC1

For following contributing scenarios no other specific measures are identified:

Material transfers: PROC2

General exposures (closed systems): PROC3

For the following contributing scenarios Transfer via enclosed lines:

General exposures (open systems): PROC4

For following contributing scenarios provide extract ventilation to points where emissions occur:

Pouring from small containers: PROC13

For following contributing scenarios use drum pumps or carefully pour out container:

Drum/batch transfers: PROC8b

For following contributing scenarios Drain or remove the substance before opening or maintenance of equipment. Transport lines before coupling Drain (Effectiveness: -):

Equipment cleaning and maintenance: PROC8a

- Worker protection

- Personal protective measures

For more information on "Personal protective equipment" see section 8 of the MSDS

- Disposal measures

A special treatment to perform in line with the local administrative regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

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Trade name Methylethylketon

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- **Exposure estimation** The exposure estimation was carried out in accordance with ECETOC TRA.

- **Worker (dermal)**

Contributing Scenario	Exposure level	RCR
PROC1	0,34 mg/kg/d	0,00
PROC2	1,37 mg/kg/d	0,00
PROC3	0,34 mg/kg/d	0,00
PROC4	6,86 mg/kg/d	0,01
PROC8a	0,69 mg/kg/d	0,00
PROC8b	6,86 mg/kg/d	0,01
PROC13	0,69 mg/kg/d	0,00

- **Worker (inhalation)**

Contributing Scenario	Exposure level	RCR
PROC1	0,01 ppm	0,00
PROC2	50 ppm	0,25
PROC3	100 ppm	0,49
PROC4	100 ppm	0,49
PROC8a	50 ppm	0,25
PROC8b	15 ppm	0,07
PROC13	25 ppm	0,12

- **Environment** An environmental exposure report does not exist.

- **Guidance for downstream users**

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

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