

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

BOSTIK CLEANER 6

Supercedes Date: 11-Oct-2016

Revision Date 18-May-2018 Revision Number 2

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

Product Name BOSTIK CLEANER 6

Pure substance/mixture Substance EC No 205-500-4 CAS No 141-78-6

REACH Registration Number 01-2119475103-46-xxxx

Chemical Name Ethyl Acetate

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

Recommended use Cleaning agent.
Uses advised against Consumer use

1.3. Details of the supplier of the safety data sheet

Company Name

Bostik Limited Common Rd ST16 3EH Stafford UK

Tel: +44 (1785) 27 26 25 Fax: +44 (1785) 25 72 36

E-mail address SDS.box-EU@bostik.com

1.4. Emergency telephone number

United Kingdom	+44 (1785) 272650
Ireland	+353 (1) 8624900 (Monday- Friday 9am-5pm)

Section 2: HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture

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

Serious eye damage/eye irritation	Category 2 - (H319)
Specific target organ toxicity (single exposure)	Category 3 - (H336)
Flammable liquids	Category 2 - (H225)

2.2. Label Elements

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

Contains Ethyl acetate

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Signal Word DANGER

Hazard statements

H336 - May cause drowsiness or dizziness

H319 - Causes serious eye irritation

H225 - Highly flammable liquid and vapour

Special provisions concerning the labelling of certain mixtures

EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements - EU (§28, 1272/2008)

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

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves and eye/face protection

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

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 + P233 - Store in a well-ventilated place. Keep container tightly closed

P501 - Dispose of contents/ container to an approved waste disposal plant

Additional information

This product requires tactile warnings if supplied to the general public

2.3. Other Hazards

General Hazards

In use may form flammable/explosive vapour-air mixture.

PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	REACH Registration Number
Ethyl acetate	205-500-4	141-78-6	80 - 100	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)		01-2119475103- 46-XXXX

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(EUH066)

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

Note: ^ indicates not classifed, however, the substance is listed in section 3 as it has an OEL.

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

3.2. Mixtures

Not applicable

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice If medical advice is needed, have product container or label at hand.

Inhalation Remove to fresh air.

Skin Contact Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/

attention.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. Call a doctor

immediately.

Ingestion If swallowed, do not induce vomiting: seek medical advice immediately and show this

container or label.

entry to unnecessary and unprotected personnel.

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

Symptoms None known.

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

Note to doctors Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use CO2, dry chemical, or foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media

Use water spray or fog; do not use straight streams

5.2. Special hazards arising from the substance or mixture

Flammable. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

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5.3. Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions

Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas.

For emergency responders

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Environmental precautions

Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

6.3. Methods and material for containment and cleaning up

Methods for Containment Dyke far ahead of spill; use dry sand to contain the flow of material. Contain and collect

spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations

(see Section 13).

Methods for cleaning up Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder,

universal binder, sawdust). Use clean non-sparking tools to collect absorbed material.

Pick up and transfer to properly labelled containers.

6.4. Reference to other sections

Reference to other sections See Section 12: ECOLOGICAL INFORMATION

Section 7: HANDLING AND STORAGE

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Take precautionary measures against static charges. Use explosion-proof electrical/ ventilating/ lighting/ equipment.

General Hygiene Considerations

Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep only in the original container/package in a cool well-ventilated place.

7.3. Specific end use(s)

Other Information

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Recommendation(s). Observe technical data sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Chemical Name	European Union	Ireland	United Kingdom
Ethyl acetate	-	TWA: 200 ppm	STEL: 400 ppm
141-78-6		STEL: 400 ppm	TWA: 200 ppm

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration No information available. **(PNEC)**

8.2. Exposure controls

Engineering Controls Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection Tight sealing safety goggles. Face protection shield.

Hand Protection Wear protective gloves. Ensure that the breakthrough time of the glove material is not

exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. The breakthrough time of the gloves depends on the material and the thickness as well as the temperature. Gloves should be replaced regularly and if there is any sign

of damage to the glove material.

Skin and Body Protection Suitable protective clothing. Antistatic footwear. Wear fire/flame resistant/retardant

clothing

Respiratory Protection In case of mist, spray or aerosol exposure wear suitable personal respiratory protection

and protective suit. In case of inadequate ventilation wear respiratory protection.

Recommended filter type: Organic gases and vapours filter conforming to EN 14387.

Environmental Exposure Controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid
Colour Colourless
Odour Fruity, Sweet

Odour Threshold No information available

<u>Property</u> <u>Values</u> <u>Remarks • Method</u>

pH No information available

Melting point / freezing point

Boiling point / boiling range
Flash Point

No information available

= 78.5 °C / 173.3 °F

= -4 °C / 24.8 °F

Evaporation Rate 4.5

Flammability (solid, gas) No information available Not applicable for liquids

Flammability Limit in Air

Upper flammability limit: 11.5 Lower flammability limit 2.1

Vapour Pressure 98.3 hPa

Vapour Density 3.04

Relative Density 0.899 @ 0.901 °C

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Water Solubility No information available

Solubility in Other Solvents Miscible: Methyl alcohol, Completely

soluble: Acetone, Benzene

Partition Coefficient 0.68

Autoignition Temperature 427 °C / 800.6 °F **Decomposition Temperature** No information available **Explosive Properties** No information available No information available **Explosive Limits** Upper No information available Lower No information available **Oxidising Properties** No information available **Kinematic Viscosity** No information available

Dynamic Viscosity 0.4508 mPa s @ 20 °C

9.2. Other information

Softening Point No information available Molecular Weight No information available

Solvent content (%) 100

Solid content (%) No information available

Density 0.902

Bulk Density

No data available

VOC content (%)

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

Stable under recommended storage conditions.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge May be ignited by friction, heat, sparks or flames.

10.3. Possibility of hazardous reactions

Possibility of Hazardous Reactions

None under normal processing.

10.4. Conditions to avoid

Keep away from heat, sparks and flames. Strong oxidising agents.

10.5. Incompatible materials

Strong acids and bases.

10.6. Hazardous decomposition products

None under normal use conditions.

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Section 11: TOXICOLOGY INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

No information or data specific to the product on this toxicological (health) effect is available.

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

Eye contact Severely irritating to eyes.

Skin ContactBased on available data, the classification criteria are not met.IngestionBased on available data, the classification criteria are not met.SensitisationBased on available data, the classification criteria are not met.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin Corrosion/Irritation Repeated exposure may cause skin dryness or cracking.

Serious eye damage/eye irritation Irritating to eyes.

Sensitisation Not applicable.

Germ Cell Mutagenicity Not applicable.

Carcinogenicity Not applicable.

Reproductive Toxicity No information available.

STOT - Single Exposure May cause disorder and damage to the. Central nervous system. Respiratory system.

STOT - Repeated Exposure No information available.

Target Organ Effects Eyes, Respiratory system, Skin.

Aspiration hazard No information available.

Numerical measures of toxicity

Acute Toxicity

Component Information

Toxicity Data Data obtained on the component(s) include

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethyl acetate	= 5620 mg/kg (Rat)	> 18000 mg/kg (Rabbit) > 20	LC0 29.3 mg/l air
141-78-6		mL/kg(Rabbit)	_

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Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity No information available

Component Information

Data obtained on the component(s) include

Chemical Name	Algae/aquatic plants	Fish	Crustacea	M-Factor
Ethyl acetate	EC50 48 h = 3300 mg/L	LC50 96 h 352 - 500 mg/L	EC50 48 h = 560 mg/L	
141-78-6	(Desmodesmus subspicatus)	(Oncorhynchus mykiss semi-	(Daphnia magna Static)	
		static) LC50 96 h = 484 mg/L		
		(Oncorhynchus mykiss flow-		
		through) LC50 96 h 220 - 250		
		mg/L (Pimephales promelas		
		flow-through)		

12.2. Persistence and degradability

Readily biodegradable.

12.3. Bioaccumulative potential

No information available.

Partition coefficient 0.68

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

No information available

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products

Disposal should be in accordance with applicable regional, national and local laws and

regulations.

Contaminated Packaging Improper disposal or reuse of this container may be dangerous and illegal.

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European Waste Catalogue 08 04 09* waste adhesives and sealants containing organic solvents or other dangerous

substances

Other Information Waste codes should be assigned by the user based on the application for which the

product was used.

Section 14: TRANSPORT INFORMATION

ADR

14.1 UN/ID no UN1173 **14.2 Proper Shipping Name** Ethyl acetate

14.3 Transport hazard class(es) 3 Labels 3 14.4 Packing Group

Description UN1173, Ethyl acetate, 3, II, (D/E)

14.5 Environmental Hazard Not applicable

14.6 Special Provisions None
Classification Code F1
Tunnel restriction code (D/E)
Limited Quantity (LQ) 1 L
ADR Hazard Id (Kemmler 33

Number)

IMDG

14.1 UN Number UN1173
14.2 Proper Shipping Name Ethyl acetate

14.3 Transport hazard class(es)14.4 Packing Group

Description UN1173, Ethyl acetate, 3, II, (4°C c.c.)

 14.5 Marine Pollutant
 Np

 14.6 Special Provisions
 None

 Limited Quantity (LQ)
 1 L

 EmS-No
 F-E, S-D

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

RID

14.1 UN NumberUN117314.2 Proper Shipping NameEthyl acetate

14.3 Transport hazard class(es) 3 Labels 3 14.4 Packing Group ||

Description UN1173, Ethyl acetate, 3, II

14.5 Environmental Hazard Not applicable

Classification Code F1

14.6 Special Provisions None
Limited Quantity (LQ) 1 L

ICAO (air)

14.1 UN/ID no UN1173 **14.2 Proper Shipping Name** Ethyl acetate

14.3 Hazard Class 3 14.4 Packing Group

Description UN1173, Ethyl acetate, 3, II

14.5 Environmental Hazard Not applicable

14.6 Special Provisions None

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IATA

14.1 UN/ID no UN1173 **14.2 Proper Shipping Name** UN1173 Ethyl acetate

14.3 Transport hazard class(es) 3 14.4 Packing Group ||

Description UN1173, Ethyl acetate, 3, II

14.5 Environmental Hazard Not applicable

14.6 Special Provisions None Limited Quantity (LQ) 1 L ERG Code 3L

Section 15: REGULATORY INFORMATION

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

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Check whether measures in accordance with Directive 94/33/EC for the protection of young people at work must be taken.

Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

Registration, Evaluation, Authorization, and Restriction of Chemicals (REACh) Regulation (EC 1907/2006)

EU-REACH (1907/2006) - Candidate List of Substances of Very High Concern (SVHC) for Authorization in accordance with Article 59

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

EU-REACH (1907/2006) - Annex XVII - Substances subject to Restriction

This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

EU-REACH (1907/2006) - Annex XIV - List of substances subject to Authorization

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)

Dangerous substance category per Seveso Directive (2012/18/EU)

P5a - FLAMMABLE LIQUIDS

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or

P5b - FLAMMABLE LIQUIDS

or

P5c - FLAMMABLE LIQUIDS

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

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Persistent Organic Pollutants

Not applicable

15.2. Chemical safety assessment

None

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H319 - Causes serious eye irritation

H336 - May cause drowsiness or dizziness

H225 - Highly flammable liquid and vapour

EUH066 - Repeated exposure may cause skin dryness or cracking

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls and personal protection

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Maximum limit value * Skin designation

PBT Persistent, Bioaccumulative, and Toxic (PBT) Chemicals STOT (RE): Specific target organ toxicity - Repeated exposure STOT (SE): Specific target organ toxicity - Single exposure

EWC: European Waste Catalogue

Key literature references and sources for data

Classification and labeling data calculated from data received from raw material suppliers

Prepared By Product Safety & Regulatory Affairs

Revision Date 18-May-2018

Indication of changes

Revision Note SDS sections updated, 1, 3, 9, 11.

Training Advice Provide adequate information, instruction, and training for operator

Further information No information available

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

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Section 1	Exposure Scenario: Worker	
Title	Manufacture of substance, industrial	
Sector of Use	SU8	
Process Category	PROC1, PROC2, PROC8b	
Environmental release Category	ERC1	
Specific environmental release category	n/a	
Processes, tasks, activities covered	Covers the industrial manufacture of Ethyl Acetate. Includes recycling/recovery, material transfers, storage, and loading	
Section 2	Operational conditions and risk management measures	
Product characteristics		
Physical form of product	Liquid	
Volatility	Vapour pressure 9.8 kPa	
Concentration of substance in product	Up to 100%	
Other product characteristics	n/a	
Section 2.1	Control of worker exposure	
Operational conditions		
Frequency and duration of use	Frequency of exposure (weekly): > 4 Days/week Frequency of exposure (annual): < 240 Days/year Duration of exposure: > 4 Hours/day	
Human factors not influenced by risk management	Potentially exposed body parts: Two hands (face side only) Exposed skin surface: 480 cm2	
Other Operational Conditions affecting worker exposure	Room size: n.a. Setting (indoor/outdoor): Outdoor	
Technical conditions and measures to control dispersion from source towards the worker	Ventilation: LEV Efficiency rate: 95 %	
Organizational measures to prevent/limit releases, dispersion and exposure	Handle substances within a closed system. Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Wear suitable gloves tested to EN374 during the activities where skin contact is possible	
Conditions and measures related to personal protection, hygiene and health evaluation	PPE: Respiratory Protection Condition: If no LEV	

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Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Manufacturing
Operational Conditions	
Frequency and duration of use	Type of release: continuous; Emission days (days/year): 300
Environmental factors not influenced by risk management	Flow rate of receiving surface water: 18,000m3/day (default)
Other Operational Conditions of use affecting environmental exposure	Processing setting (indoor/outdoor): Outdoor Processing temperature: Ambient Processing pressure: Ambient
Technical conditions and measures at process level (source) to prevent release	Keep containers tightly closed. Store in a bounded area.
	Do not discharge into sewers or drains. Use appropriate emission abatement equipment from LEV systems if required by local legislation. Waste product and empty containers should be disposed of as hazardous waste in accordance with all local and national regulations
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Apply technical measures aiming at reducing releases to air (Containment by preference or catalytic or thermal gas oxidation): Efficacy >70% Apply technical measures aiming at reduction and cleaning of waste water (WWTP/local STP (e.g. biological treatment)): Efficacy >90%
Organizational measures to prevent / limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	Size of STP: > 2000 m3/day Degradation efficacy: 90% Sludge treatment (disposal or recovery): Disposal or recovery
Conditions and measures related treatment of waste	Hazardous waste incineration or use as into recycled fuels

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	For the environmental assessment measured data have been used.

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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Section 1	Exposure Scenario: Worker	
Title	Drumming and distribution, industrial	
Sector of Use	SU10	
Process Category	PROC1, PROC2, PROC8a, PROC8b, PROC9	
Environmental release Category	ERC2	
Specific environmental release category	n/a	
Processes, tasks, activities covered	Covers transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated and dedicated facilities. Includes material transfers, storage, maintenance and loading.	
Section 2	Operational conditions and risk management measures	
Product characteristics		
Physical form of product	Liquid	
Volatility	Vapour pressure 9.8 kPa	
Concentration of substance in product	Up to 100%	
Other product characteristics	n/a	
Section 2.1	Control of worker exposure	
Operational conditions		
Frequency and duration of use	Frequency of exposure (weekly): > 4 Days/week Frequency of exposure (annual): < 240 Days/year Duration of exposure: > 4 Hours/day	
Human factors not influenced by risk management	Potentially exposed body parts: Two hands Exposed skin surface: 960 cm2	
Other Operational Conditions affecting worker exposure	Room size: n.a. Setting (indoor/outdoor): Outdoor or in highly ventilated (open) Spaces	
Technical conditions and measures to control dispersion from source towards the worker	Outdoor: n/a Indoor: LEV with efficiency rate: >90 %	
Organizational measures to prevent/limit releases, dispersion and exposure	Provide a good standard of general or controlled ventilation. Wear suitable gloves tested to EN374 during the activities where skin contact is possible. Limit the duration of PROC8 (transfer, loading and filling at non dedicated facilities) activities to less than 4 hours per day.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374	

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Section 2.2 Control of environmental exposure **Operational conditions** Contributing scenario **Drumming and distribution Operational Conditions** Frequency and duration of use Emission days (days/year): <300 Environmental factors not influenced by risk management Flow rate of receiving surface water: 18,000m3/day (default) Other Operational Conditions of use affecting Processing setting (indoor/outdoor): Outdoor environmental exposure Processing temperature: Ambient Processing pressure: Ambient Technical conditions and measures at process level (source) Keep containers tightly closed. Store in a bounded area (closed sinks/ basins) to prevent to prevent release discharge to waste-and/or surface water. Do not discharge into sewers or drains. Waste product and empty containers should be disposed of as hazardous waste in accordance with all local and national regulations Organizational measures to prevent / limit release from site Containment should be used to minimise releases to air. Conditions and measures related to municipal sewage Size of STP: > 2000 m3/day treatment plant Degradation efficacy: 90% Sludge treatment (disposal or recovery): Disposal or recovery Conditions and measures related treatment of waste Hazardous waste incineration or use as into recycled fuels

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	For the environmental assessment measured data have been used.

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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Section 1	Exposure Scenario: Worker
Title	Formulation of Ethyl Acetate and its mixtures, industrial
Sector of Use	SU10
Process Category	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9
Environmental release Category	ERC2
Specific environmental release category	n/a
Processes, tasks, activities covered	Covers the industrial mixing or blending in batch processes for formulation of preparations and articles, transfer of substance or preparation into small containers (dedicated filling line), and transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated and non-dedicated facilities.
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid
Volatility	Vapour pressure 9.8 kPa
Concentration of substance in product	Up to 100%
Other product characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Frequency and duration of use	Frequency of exposure (weekly): > 4 Days/week Frequency of exposure (annual): < 240 Days/year Duration of exposure: > 4 Hours/day
Human factors not influenced by risk management	Potentially exposed body parts: Two hands Exposed skin surface: 960 cm2
Other Operational Conditions affecting worker exposure	Room size: n.a. Setting (indoor/outdoor): Indoor
Technical conditions and measures to control dispersion from source towards the worker	Ventilation: LEV when possible (not required) Efficiency rate: n.a.
Organizational measures to prevent/limit releases, dispersion and exposure	Handle substances within a predominantly closed system. Ensure material transfers are under containment or extract ventilation when possible. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Provide good ventilation to points where emissions occur. Wear suitable gloves tested to EN374 during the activities where skin contact is possible.
Conditions and measures related to personal protection, hygiene and health evaluation	No PPE required

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Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Formulation of Ethyl Acetate and its mixtures
Operational Conditions	
Frequency and duration of use	Type of release: continuous; Emission days (days/year): <300
Environmental factors not influenced by risk management	Flow rate of receiving surface water: 18,000m3/day (default)
Other Operational Conditions of use affecting environmental exposure	Processing setting (indoor/outdoor): Indoor Processing temperature: n/a Processing pressure: n/a
Technical conditions and measures at process level (source) to prevent release	Keep containers tightly closed. Store in a bounded area. Do not discharge into sewers or drains.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Use containment measures to reduce releases to air: n.a. No specific onsite measures required. When possible apply technical measures aiming at reduction and cleaning of wastewater: n.a.
Organizational measures to prevent / limit release from site	Do not release wastewater directly into environment. Wastewater release into municipal STP.
Conditions and measures related to municipal sewage treatment plant	Size of STP: > 2000 m3/day Degradation efficacy: 90% Sludge treatment (disposal or recovery): Disposal or recovery
Conditions and measures related treatment of waste	Hazardous waste incineration or use as into recycled fuels

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	For the environmental assessment measured data have been used.

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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Section 1	Exposure Scenario: Worker
Title	Use as extraction solvent and/or processing aid, industrial
Sector of Use	SU9
Process Category	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b
Environmental release Category	ERC1
Specific environmental release category	n/a
Processes, tasks, activities covered	Covers the industrial use in closed or open batch and other processes with the aim of synthesis or formulation. Includes material transfer and storage. Ethyl Acetate is in these processes used as extraction solvent or processing aid. Possibility of exposure exists
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid
Volatility	Vapour pressure 9.8 kPa
Concentration of substance in product	Up to 100%
Other product characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Frequency and duration of use	Frequency of exposure (weekly): > 4 Days/week Frequency of exposure (annual): < 240 Days/year Duration of exposure: > 4 Hours/day (PROC3, PROC4) 1-4 h/d (PROC8a, PROC8b)
Human factors not influenced by risk management	Potentially exposed body parts: -Two hands face side only (automated processes/PROC3,4) -Two hands (transfer, filling, etc./PROC8a,b) Exposed skin surface: -480 cm2 (automated processes/PROC3,4) -960 cm2 (transfer, filling, etc./PROC8a,b)
Other Operational Conditions affecting worker exposure	Room size: n.a. Setting (indoor/outdoor): Indoor
Technical conditions and measures to control dispersion from source towards the worker	LEV not required: n.a. Efficiency rate: n.a.
Organizational measures to prevent/limit releases, dispersion and exposure	Handle substances within a predominantly closed system. Ensure material transfers are under containment or extract ventilation. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Provide extract ventilation to points where emissions occur
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374 during the activities where skin contact is possible (e.g. transfer, filling, sampling, etc.)

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Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Use as extraction solvent and/or processing aid
Operational Conditions	
Frequency and duration of use	Type of release: continuous; Emission days (days/year): 300
Environmental factors not influenced by risk management	Flow rate of receiving surface water: 18,000m3/day (default)
Other Operational Conditions of use affecting environmental exposure	Processing setting (indoor/outdoor): Indoor Processing temperature: Ambient Processing pressure: Ambient
Technical conditions and measures at process level (source) to prevent release	Keep containers tightly closed. Store in a bounded area. Do not discharge into sewers or drains. Use appropriate emission abatement equipment from LEV systems if required by local legislation. Waste product and empty containers should be disposed of as hazardous waste in accordance with all local and national regulations
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Use containment measures to minimise emissions to air: Efficacy >70% Apply technical measures aiming at reduction and cleaning of
	waste water (WWTP/local STP (e.g. biological treatment)): Efficacy >90%
Organizational measures to prevent / limit release from site	Do not release wastewater directly into environment. Wastewater release into municipal STP.
Conditions and measures related to municipal sewage treatment plant	Size of STP: > 2000 m3/day Degradation efficacy: 90% Sludge treatment (disposal or recovery): Disposal or recovery
Conditions and measures related treatment of waste	Hazardous waste incineration or use as into recycled fuels

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	For the environmental assessment measured data have been used.

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Section 1	Exposure Scenario: Worker
Title	Application of paints, coatings and other mixtures containing Ethyl Acetate by way of spraying, industrial
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC 5, PROC7, PROC8a, PROC8b
Environmental release Category	ERC4
Specific environmental release category	n/a
Processes, tasks, activities covered	Indoors painting, application of coatings, adhesives, polishes/cleaners, air care products and other mixtures containing Ethyl Acetate by automated spraying techniques in factories or comparable industrial settings. Includes material mixing, transfer and storage.
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid
Volatility	Vapour pressure 9.8 kPa
Concentration of substance in product	Up to 25%
Other product characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Frequency and duration of use	Frequency of exposure (weekly): > 4 Days/week Frequency of exposure (annual): < 240 Days/year
	Duration of exposure: > 4 Hours/day, 1-4 h/d (PROC8a, PROC8b)
Human factors not influenced by risk management	Potentially exposed body parts: Two hands and forearms Exposed skin surface: 1500 cm2
Other Operational Conditions affecting worker exposure	Room size: n.a. Setting (indoor/outdoor): Indoor
Technical conditions and measures at process level (source) to prevent release	Concentration substance in the product used: Limit the concentration of the substance in the product used to 25%.
Technical conditions and measures to control dispersion from source towards the worker	Ventilation: LEV (efficiency rate 95%)

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Organizational measures to prevent/limit releases, dispersion and exposure	Handle substance within a predominantly closed system provided with extract ventilation. Do not carry out operation for more than 1 hour without respiratory protection (PPE). Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Spraying should be carried out in a vented laminar spray booth or using respiratory PPE.
Conditions and measures related to personal protection, hygiene and health evaluation	PPE: Respiratory Protection (e.g. respirator conforming to EN140 with Type A filter or better) Condition: If no LEV or vented laminar spray booth. If the spraying activity duration is longer than 1h. PPE: Wear chemically resistant gloves

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Application of paints, coatings and other mixtures containing Ethyl Acetate by way of spraying
Operational Conditions	
Frequency and duration of use	Type of release: Continuous; Emission days (days/year): 300
Environmental factors not influenced by risk management	Flow rate of receiving surface water: 18,000m3/day (default)
Other Operational Conditions of use affecting environmental exposure	Processing setting (indoor/outdoor): Indoor Processing temperature: n/a Processing pressure: n/a
Technical conditions and measures at process level (source) to prevent release	Do not discharge into sewers or drains. Use appropriate emission abatement equipment from LEV systems if required by local legislation. Waste product and empty containers should be disposed of as hazardous waste in accordance with all local and national regulations.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Use technical measures such as catalytic or thermal oxidation to reduce emissions to air if required. Use containment measures to reduce fugitive emissions. Comply with all local legislative requirements on permitted emission limits. Efficacy: >80% minimum No specific onsite measures required. Efficacy: n.a.
Organizational measures to prevent / limit release from site	Do not release wastewater directly into environment. Wastewater release into municipal STP.
Conditions and measures related to municipal sewage treatment plant	Size of STP: > 2000 m3/day Degradation efficacy: 90% Sludge treatment (disposal or recovery): Disposal or recovery.
Conditions and measures related treatment of waste	Hazardous waste incineration or use as into recycled fuels

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	For the environmental assessment measured data have been used.

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Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Section 1	Exposure Scenario: Worker
Title	Application of paints and coatings (non-spray application), industrial
Sector of Use	SU3
Process Category	PROC 1, PROC2, PROC5, PROC8a, PROC8b, PROC10, PROC13
Environmental release Category	ERC4
Specific environmental release category	n/a
Processes, tasks, activities covered	Indoor roller application, brushing and treatment of surfaces. Treatment of articles by dipping and pouring. Includes material mixing, transfer and storage
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid
Volatility	Vapour pressure 9.8 kPa
Concentration of substance in product	Up to 100%
Other product characteristics	
Section 2.1	Control of worker exposure
Operational conditions	
Frequency and duration of use	Frequency of exposure (weekly): > 4 Days/week Frequency of exposure (annual): < 240 Days/year Duration of exposure: > 4 Hours/day, 1-4 h/d (PROC8a activities)
Human factors not influenced by risk management	Potentially exposed body parts: Two hands Exposed skin surface: 960 cm2
Other Operational Conditions affecting worker exposure	Room size: n.a. Setting (indoor/outdoor): Indoor
Technical conditions and measures at process level (source) to prevent release	Concentration substance in the product used: Limit the concentration of the substance in the product used to 25%.

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Technical conditions and measures to control dispersion from source towards the worker	Ventilation: LEV (efficiency rate 95%)
Organizational measures to prevent/limit releases, dispersion	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour) Provide extract ventilation to points where emissions occur. Clear spills
and exposure	immediately.
Conditions and measures related to personal protection, hygiene and health evaluation	PPE: Wear suitable gloves during the activities where skin contact is possible. Condition: gloves tested to EN374

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Application of paints and coatings (non-spray application
Operational Conditions	
Frequency and duration of use	Type of release: Continuous; Emission days (days/year): 300
Environmental factors not influenced by risk management	Flow rate of receiving surface water: 18,000m3/day (default)
Other Operational Conditions of use affecting environmental exposure	Processing setting (indoor/outdoor): Indoor Processing temperature: n/a Processing pressure: n/a
Technical conditions and measures at process level (source) to prevent release	Do not discharge into sewers or drains. Use appropriate emission abatement equipment from LEV systems if required by local legislation. Waste product and empty containers should be disposed of as hazardous waste in accordance with all local and national regulations.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Use technical measures such as catalytic or thermal oxidation to reduce emissions to air if required. Use containment measures to reduce fugitive emissions. Comply with all local legislative requirements on permitted emission limits. Efficacy: >90% minimum No specific onsite measures required.
Organizational measures to prevent / limit release from site	Do not release wastewater directly into environment. Wastewater release into municipal STP.
Conditions and measures related to municipal sewage treatment plant	Size of STP: > 2000 m3/day Degradation efficacy: 90% Sludge treatment (disposal or recovery): Disposal or recovery
Conditions and measures related treatment of waste	Hazardous waste incineration or use as into recycled fuels

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	For the environmental assessment measured data have been used.

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Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Section 1	Exposure Scenario: Worker
Title	Industrial and professional (end) use of ethyl acetate as laboratory reagent.
Sector of Use	SU3, SU22
Process Category	PROC15
Environmental release Category	ERC4, ERC8a
Specific environmental release category	n/a
Processes, tasks, activities covered	Use as small-scale laboratory reagent
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid
Volatility	Vapour pressure 9.8 kPa
Concentration of substance in product	Up to 100%
Other product characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Frequency and duration of use	Frequency of exposure (weekly): > 4 Days/week Frequency of exposure (annual): 240 Days/year Duration of exposure: 1 - 4 Hours/day
Human factors not influenced by risk management	Potentially exposed body parts: One hand, face side only Exposed skin surface: 240 cm2
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. Setting (indoor/outdoor): Indoor
Technical conditions and measures at process level (source) to prevent release	No specific measures identified
Technical conditions and measures to control dispersion from source towards the worker	No specific measures identified

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Organizational measures to prevent/limit releases, dispersion and exposure	No specific measures identified
Conditions and measures related to personal protection, hygiene and health	No specific PPE measures identified

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Industrial and professional (end) use of ethyl acetate as laboratory reagent
Operational Conditions	
Frequency and duration of use	Type of release: Continuous; Emission days (days/year): 300
Environmental factors not influenced by risk management	Flow rate of receiving surface water: 18,000m3/day (default)
Other Operational Conditions of use affecting environmental exposure	Processing setting (indoor/outdoor): Indoor Processing temperature: Ambient Processing pressure: Ambient
Technical conditions and measures at process level (source) to prevent release	No specific onsite measures identified
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	No specific onsite measures identified
Organizational measures to prevent / limit release from site	Do not release wastewater directly into environment. Wastewater release into municipal STP.
Conditions and measures related to municipal sewage treatment plant	Size of STP: > 2000 m3/day Degradation efficacy: 90% Sludge treatment (disposal or recovery): Disposal or recovery
Conditions and measures related treatment of waste	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	For the environmental assessment measured data have been used.

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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Section 1	Exposure Scenario: Worker		
Title	Professional application of paints, coatings, adhesives and other mixtures/products containing Ethyl Acetate (indoors or outdoors, spray or nonspray application.)		
Sector of Use	SU22		
Process Category	PROC1, PROC2, PROC 8a, PROC8b, PROC 10, PROC11, PROC13, PROC19		
Environmental release Category	ERC8a, ERC8d		
Specific environmental release category	n/a		
Processes, tasks, activities covered	Non industrial / professional spraying of mixtures and products like paint, coatings, adhesives, polishes, cleaners, etc. Includes material transfer, hand mixing and storage		
Section 2	Operational conditions and risk management measures		
Product characteristics			
Physical form of product	Liquid		
Volatility	Vapour pressure 9.8 kPa		
Concentration of substance in product	5 – 25 %		
Other product characteristics	n/a		
Section 2.1	Control of worker exposure		
Operational conditions			
Frequency and duration of use	Frequency of exposure (weekly): > 4 Days/week Frequency of exposure (annual): <300 Days/year Duration of exposure: 1 - 4 Hours/day (PROC 10, 11, 13) 15 min/day -1 Hour/day (PROC 8a, 8b, 19)		
Human factors not influenced by risk management	Potentially exposed body parts: Two hands and forearms Exposed skin surface: 1500 cm2		
Other Operational Conditions affecting worker exposure	Room size: n/a Setting (indoor/outdoor): Indoor		
Technical conditions and measures at process level (source) to prevent release	Concentration of the substance in the product used: Limit the concentration of the substance to 25%		
Technical conditions and measures to control dispersion from source towards the worker	Ventilation Spray application indoors: LEV (efficiency 80 %) Other situations: Good general ventilation If no LEV when spraying indoors Carry out in ventilated booth		
Organizational measures to prevent/limit releases, dispersion and exposure	Do not carry out operation for more than 4 hour. For activities where intimate skin contact is possible (PROC19) limit the duration of activities to 1 hour. Clear spills immediately.		
Conditions and measures related to personal protection, hygiene and health evaluation	PPE: Respiratory Protection with at least 90% reduction in inhaled concentration of the substance Condition: If no LEV or ventilated booth available (Spray application indoors only) PPE: Wear suitable gloves during the activities where skin contact is possible. Condition: Chemically resistant gloves tested to EN374		

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Section 2.2 Control of environmental exposure **Operational conditions** Contributing scenario Professional application of paints, coatings, adhesives and other mixtures/products containing Ethyl Acetate (indoors or outdoors, spray or non-spray application.) **Operational Conditions** Frequency and duration of use Type of release: Continuous; Emission days (days/year): 365 Environmental factors not influenced by risk management Flow rate of receiving surface water: 18,000m3/day (default) Other Operational Conditions of use affecting environmental Processing setting (indoor/outdoor): Indoor Processing temperature: Ambient Processing pressure: Ambient Technical conditions and measures at process level (source) Do not discharge directly into environment. to prevent release Waste product and empty containers should be disposed of as hazardous waste in accordance with all local and national regulations. Technical onsite conditions and measures to reduce or limit No specific onsite measures identified discharges, air emissions and releases to soil Organizational measures to prevent / limit release from site Do not release wastewater directly into environment. Conditions and measures related to municipal sewage No specific measured required. treatment plant Conditions and measures related treatment of waste Collect all unused material for disposal as hazardous waste in compliance with local and national regulations. Use a licensed waste contractor.

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	For the environmental assessment measured data have been used.

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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Section 1	Exposure Scenario: Consumer	
Title	Use of Ethyl Acetate in consumer products	
Sector of Use	SU21	
Process Category	n/a	
Product Category	PC39, PC9a	
Environmental release Category	ERC8a	
Specific environmental release category	n/a	
Processes, tasks, activities covered	Covers the consumer use of products which contain Ethyl Acetate	
Section 2	Operational conditions and risk management measures	
Product characteristics		
Physical form of product	Liquid	
Concentration of substance in product	Up to 25 %	
Other product characteristics	n/a	
Section 2.1	Control of consumer exposure	
Operational conditions		
	residence only apply for consumer use of paint / coatings products with maximum 25% t.	
Product characteristic	Description: Consumer painting and coatings products, in liquid form, solvent rich or waterborne, roller, brush or spray applications (spray cans). Weight fraction substance in the product: Up to maximum of 25%	
Amounts used / applied per event	Spray application: 15 min spraying (max 0.5 g/sec) Roller and/or other non spray applications: 3750 g for waterborne wall paint 300 g for solvent reach paint	
Amounts used / applied per event Frequency and duration of use	Spray application: 15 min spraying (max 0.5 g/sec) Roller and/or other non spray applications: 3750 g for waterborne wall paint	
	Spray application: 15 min spraying (max 0.5 g/sec) Roller and/or other non spray applications: 3750 g for waterborne wall paint 300 g for solvent reach paint 0-5 times per year Exposure duration per event Spray application: 25 minute	
Frequency and duration of use Human factors not influenced by	Spray application: 15 min spraying (max 0.5 g/sec) Roller and/or other non spray applications: 3750 g for waterborne wall paint 300 g for solvent reach paint 0-5 times per year Exposure duration per event Spray application: 25 minute Roller and/or other non spray applications: 132 minute Potentially exposed body parts: Two hands and forearms Exposed	

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Organisational consumer protection measures (e.g. recommendation and/or use instruction information for consumer)

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Spray application Recommend:

- Not using in small, enclosed areas/rooms without ventilation - Ensure good ventilation when using indoors e.g. open windows.

Roller and/or other non spray applications Recommend:

- Not using in small, enclosed areas/rooms without ventilation
- Ensure good ventilation when using indoors e.g. open windows.

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Use of Ethyl Acetate in consumer products
Operational Conditions	
Frequency and duration of use	Emission days (days/year): 365
Environmental factors not influenced by risk management	Flow rate of receiving surface water: 18,000m3/day (default)
Other Operational Conditions of use affecting environmental exposure	Processing setting (indoor/outdoor): Indoor Processing temperature: Ambient Processing pressure: Ambient
Conditions and measures related to municipal sewage treatment plant	Size of STP: > 2000 m3/day (default) Degradation efficacy: > 70 % Sludge treatment (disposal or recovery): Disposal or recovery
Conditions and measures related treatment of waste	No specific measures required

Section 3	Exposure estimation	
3.1 Health	Estimation is based on ConsExpo 4.1 model.	
3.2 Environment	For the environmental assessment measured data have been used.	

Section 4	Guidance to check compliance with the Exposure Scenario

Additional good practice advice beyond the REACH CSA

Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH Use specific measures expected to reduce the predicted exposure beyond the level estimated based on the exposure scenario when possible.

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Section 1	Exposure Scenario Title		
Title	Uses in agrochemicals, Professional		
Sector of Use	SU22		
Process Category	PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13		
Environmental release Category	ERC8a, ERC8d		
Processes, tasks, activities covered	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fooging; including equipment clean-downs and disposal.		

Section 2	Operational conditions and risk management measures	
Product characteristics		
Physical form of product	Liquid, vapour pressure >10kPa	
Concentration of substance in product	Covers up to 25 % (unless stated differently)	
Section 2.1	Control of worker exposure	
Operational conditions		
Frequency and duration of use	Covers daily	exposures up to 8 hours (unless stated)
Other Operational Conditions affecting worker exposure		ood basic standard of occupational hygiene is implemented. Assumes and temperature (> 20°C above ambient)
Risk Management Measures	<u> </u>	
Contributing Scenarios		Risk Management Measures
General measures (skin irritants)		If repeated and/or prolonged skin exposure to the substance is likely, wear suitable gloves tested to EN374 and provide employee skin care programs.
Transfer from/pouring from containers. Indoor		Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide enhanced general ventilation by mechanical means. (Effectiveness (of a measure): 70%)
Mixing operations. Indoor		Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide enhanced general ventilation by mechanical means. (Effectiveness (of a measure): 70%)
Spraying/fogging by manual application; Indoor, with local exhaust ventilation.		Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Carry out in a vented booth or extracted enclosure. (Effectiveness (of a measure): 80%). Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. Spraying. Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80%)
Spraying/fogging by manual application; Pouring from small containers		Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. Spraying. (Effectiveness (of a measure): 80%)

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Spraying/fogging by manual application; Indoor, with local exhaust ventilation. With potential for aerosol generation	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Carry out in a vented booth or extracted enclosure. (Effectiveness (of a measure): 80%). Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. Spraying. (Effectiveness (of a measure): 80%)
Spraying/fogging by manual application; Outdoor, with local exhaust ventilation. With potential for aerosol generation	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. Spraying. (Effectiveness (of a measure): 80%)
Spraying/fogging by machine application. Outdoor	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Ensure operation is undertaken outdoors. Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20, with local exhaust ventilation (Effectiveness (of a measure): 95%) Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80%)
Spraying/fogging by machine application; Outdoor, with local exhaust ventilation. With potential for aerosol generation	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Ensure operation is undertaken outdoors. Apply within a vented cab supplied with filtered air under positive pressure
	and with a protection factor of >20, with local exhaust ventilation (Effectiveness (of a measure): 95%) Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80%)
Ad hoc manual application via trigger sprays, dipping, etc.	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide enhanced general ventilation by mechanical means. Ensure operation is undertaken outdoors. (Effectiveness (of a measure): 70%)
Equipment cleaning and maintenance	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Drain down system prior to equipment opening or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Disposal of wastes.	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 5%. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better.
Storage; with sample collection	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Store substance within a closed system.

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Uses in agrochemicals, Professional
Operational Conditions	
Frequency and duration of use	Emission days (days/year): 365
Environmental factors not influenced by risk management	
Local fresh water dilution factor	10
Local marine water dilution factor	100

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Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	Emission or Release fraction to air from process: 0.9 % Emission or to wastewater from process: 0.01 % Emission or Release fraction to soil from process: 0.09%
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organizational measures to prevent/limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	Flow rate of municipal sewage treatment plant effluent: (m3/d): 2000 Estimated substance removal from wastewater via domestic sewage treatment (%): 88%
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations. Can be incinerated, when in compliance with local regulations. (Effectiveness (of a measure): 99.9%)
Other environmental control measures additional to above	n/a

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	The ECETOC TRA tool has been used to estimate environmental emissions unless otherwise indicated. When the recommended risk management measures and operational conditions are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.
Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Section 1	Exposure Scenario: Consumer
Title	Uses in agrochemicals, consumer products
Sector of Use	SU21
Process Category	n/a
Product Category	PC27

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Environmental release Category	ERC8a	
Specific environmental release category	n/a	
Processes, tasks, activities covered	Covers the consumer use of agrochemicals which contain Ethyl Acetate	
Section 2	Operational conditions and risk management measures	
Product characteristics		
Physical form of product	Liquid	
Concentration of substance in product	Up to 25 %	
Other product characteristics	n/a	
Section 2.1	Control of consumer exposure	
Operational conditions		
Frequency and duration of use	Covers daily exposures up to 0.5 hours (unless stated)	
Other Operational Conditions affecting worker exposure	Assumes use at ambient temperature	
Risk Management Measures		
Contributing Scenarios	Risk Management Measures	
Plant protection products.	Unless otherwise stated Covers concentrations up to 25%. Covers frequency up to 1 time per day. For each use event, covers use amounts up to 50g. Covers skin contact area up to 857.50 cm2. Covers use in room size of 20m2. Assumes use with typical ventilation. Covers exposure up to 0.5 hours/event.	

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Use of Ethyl Acetate in agrochemicals
Operational Conditions	
Frequency and duration of use	Emission days (days/year): 365
Environmental factors not influenced by risk management	
Local fresh water dilution factor	10
Local marine water dilution factor	100
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	Emission or Release fraction to air from process: 90 % Emission or to wastewater from process: 1% Emission or Release fraction to soil from process: 9%
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organizational measures to prevent/limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	Flow rate of municipal sewage treatment plant effluent: (m3/d): 2000 Estimated substance removal from wastewater via domestic sewage treatment (%): 88%

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Conditions and measures related to external treatment of	Dispose of empty containers and wastes safely.
waste for disposal	

Section 3	Exposure estimation
3.1 Health	Estimation is based ECETOC TRA.
3.2 Environment	Estimation is based ECETOC TRA

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Not applicable for wide dispersive uses. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Predicted exposures are not expected to exceed the applicable consumer reference values when the operational/risk management measures given in section 2 are implemented.
4.2 Environment	Not applicable for wide dispersive uses.

Section 1	Exposure Scenario: Worker
Title	Use in Cleaning Agents, Industrial
Sector of Use	SU3
Process Category	PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13
Environmental release Category	ERC4
Specific environmental release category	n/a
Processes, tasks, activities covered	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid
Volatility	Vapour pressure >10 kPa
Concentration of substance in product	Up to 100%
Other product characteristics	
Section 2.1	Control of worker exposure

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Operational conditions	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	n/a
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. Assumes use at elevated temperature (> 20°C above ambient)
Risk Management Measures	
Contributing Scenarios	Risk Management Measures
General measures (skin irritants)	If repeated and/or prolonged skin exposure to the substance is likely, wear suitable gloves tested to EN374 and provide employee skin care programs.
Bulk transfers. Dedicated facility	Avoid carrying out the operation for more than 8 hours. Ensure material transfers are under containment or extract ventilation. Clear transfer lines prior to de-coupling, with local exhaust ventilation (Effectiveness (of a measure): 97%)
Automated process with (semi) closed systems. Used in contained systems	Avoid carrying out the operation for more than 8 hours. No other specific measures identified.
Automated process with (semi) closed systems. Drum/batch transfers. Used in contained systems	Avoid carrying out the operation for more than 8 hours. No other specific measures identified.
Application of cleaning products in closed systems	Avoid carrying out the operation for more than 8 hours. No other specific measures identified.
Filling/preparation of equipment from drums or containers	Avoid carrying out the operation for more than 8 hours. Ensure material transfers are under containment or extract ventilation. Clear transfer lines prior to de-coupling, with local exhaust ventilation (Effectiveness (of a measure): 90%)
Use in contained batch processes. Treatment by heating	Avoid carrying out the operation for more than 8 hours. Provide extraction ventilation at points where emissions occur, with local exhaust ventilation (Effectiveness (of a measure): 90%)
Degreasing small objects in cleaning station	Avoid carrying out the operation for more than 8 hours. Clear spills immediately. Provide extraction ventilation at points where emissions occur, with local exhaust ventilation (Effectiveness (of a measure): 90%)
Cleaning with low-pressure washers	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Wear a respirator conforming to EN140 with Type A filter or better.
Cleaning with high-pressure washers	Avoid carrying out the operation for more than 8 hours. Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. (Effectiveness (of a measure): 90%)
Manual, Surfaces, Cleaning, no spraying	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Wear a respirator conforming to EN140 with Type A filter or better.

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Use in Cleaning Agents
Operational Conditions	

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Frequency and duration of use	Type of release: Continuous; Emission days (days/year): 20
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other Operational Conditions of use affecting environmental exposure	Release fraction to air from process: 30% Release fraction to wastewater from process: 0.01% Release fraction to soil from process: 0%
Technical conditions and measures at process level (source) to prevent release	Bund storage facilities to prevent soil and water pollution in the event of a spillage. Prevent environmental discharge consistent
	with regulatory requirements.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Treat air emission to provide a typical removal efficiency of (Effectiveness (of a measure): 70%). Soil emissions are not applicable as there is no direct release to soil.
Organizational measures to prevent / limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	Size of municipal sewage system/ treatment plant (m3/d): 2000 Estimated substance removal from wastewater via domestic sewage treatment (%): 88 If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Conditions and measures related treatment of waste	Dispose of waste product or used containers according to local regulations. External treatment and disposal of waste should comply with applicable local and/or national regulations. Can be incinerated, when in compliance with local regulations. (Effectiveness (of a measure): 99.9%).

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	The ECETOC TRA tool has been used

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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Section 1	Exposure Scenario: Worker
Title	Use in Cleaning Agents, Professional
Sector of Use	SU22
Process Category	PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13
Environmental release Category	ERC8a
Specific environmental release category	n/a
Processes, tasks, activities covered	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid

Volatility	Vapour pressure >10 kPa
Concentration of substance in product	Up to 100%
Other product characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	n/a
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. Assumes use at not more than 20°C above ambient temperature.
Risk Management Measures	
Contributing Scenarios	Risk Management Measures
General measures (skin irritants)	If repeated and/or prolonged skin exposure to the substance is likely, wear suitable gloves tested to EN374 and provide employee skin care programs.
Filling/preparation of equipment from drums or containers. Dedicated facility	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide a good standard of general ventilation (not less than 5 to 15 changes per hour). Wear a respirator conforming to EN140 with Type A filter or better.
Automated process with (semi) closed systems. Used in contained systems	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. No other specific measures identified.

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Automated process with (semi) closed systems. Drum/batch transfers. Used in contained systems	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. No other specific measures identified.
Semi automated process (e.g. Semi automatic application of floor care and maintenance products)	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide a good standard of general ventilation (not less than 5 to 15 changes per hour).
Filling/preparation of equipment from drums or containers. Outdoor	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. (Effectiveness (of a measure): 90%)
Dipping, immersion and pouring, Manual, Surfaces, Cleaning	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide a good standard of general ventilation (not less than 5 to 15 changes per hour).
Cleaning with low-pressure washers. Rolling, Brushing, no spraying	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide a good standard of general ventilation (not less than 5 to 15 changes per hour).
Cleaning with high-pressure washers. Spraying, Indoor	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide a good standard of general ventilation (not less than 5 to 15 changes per hour).
Cleaning with high-pressure washers. Spraying, Outdoor	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 1%. Ensure operation is undertaken outdoors. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. Spraying. Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 80%)
Spraying. Manual, Surfaces, Cleaning	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 5%. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour).
Ad hoc manual application via trigger sprays, dipping, etc. Rolling, Brushing	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide extraction ventilation at points where emissions occur, with local exhaust ventilation (Effectiveness (of a measure): 80%). Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. (Effectiveness (of a measure): 90%)
Application of cleaning products in closed systems. Outdoor	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Ensure operation is undertaken outdoors. Enclosed machinery. (Effectiveness (of a measure): 50%).
Cleaning of medical devices	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Provide extraction ventilation at points where emissions occur, with local exhaust ventilation (Effectiveness (of a measure): 80%).

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Use in Cleaning Agents
Operational Conditions	
Frequency and duration of use	Type of release: Continuous; Emission days (days/year): 365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100

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Other Operational Conditions of use affecting environmental exposure	Release fraction to air from process: 100% Release fraction to wastewater from process: 100% Release fraction to soil from process: 0%
Technical conditions and measures at process level (source) to prevent release	Prevent environmental discharge consistent with regulatory requirements.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Soil emissions are not applicable as there is no direct release to soil.
Organizational measures to prevent / limit release from site	
Conditions and measures related to municipal sewage treatment plant	Size of municipal sewage system/ treatment plant (m3/d): 2000 Estimated substance removal from wastewater via domestic sewage treatment (%): 88 If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Conditions and measures related treatment of waste	Dispose of waste product or used containers according to local regulations. External treatment and disposal of waste should comply with applicable local and/or national regulations. Can be incinerated, when in compliance with local regulations. (Effectiveness (of a measure): 99.9%).

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	The ECETOC TRA tool has been used

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Not applicable for wide dispersive use.

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Section 1	Exposure Scenario: Worker
Title	Use in Lubricants, Industrial
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18
Environmental release Category	ERC4, ERC7
Specific environmental release category	n/a
Processes, tasks, activities covered	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid
Volatility	Vapour pressure >10 kPa
Concentration of substance in product	Up to 100%
Other product characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	n/a
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. Assumes use at not more than 20°C above ambient temperature.
Risk Management Measures	
Contributing Scenarios	Risk Management Measures
General measures (skin irritants)	If repeated and/or prolonged skin exposure to the substance is likely, wear suitable gloves tested to EN374 and provide employee skin care programs.
General exposures (closed systems)	Avoid carrying out the operation for more than 8 hours. Handle substance within a closed system.
General exposures (closed systems). Batch process, with sample collection.	Avoid carrying out the operation for more than 8 hours. Handle substance within a closed system.
General exposures (open systems)	Avoid carrying out the operation for more than 8 hours. Provide extraction ventilation at points where emissions occur, with local exhaust ventilation (Effectiveness (of a measure): 90%).

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Bulk transfers.	Avoid carrying out the operation for more than 8 hours. Clear spills immediately. Ensure material transfers are under containment or extract ventilation. Remotely vent displaced vapours. (Effectiveness (of a measure): 80%).
Filling/preparation of equipment from drums or containers. Dedicated facility	Avoid carrying out the operation for more than 8 hours. Clear spills immediately. Ensure material transfers are under containment or extract ventilation. Remotely vent displaced vapours. (Effectiveness (of a measure): 80%).
Filling/preparation of equipment from drums or containers. NonDedicated facility	Avoid carrying out the operation for more than 8 hours. Use drum pumps. Transfer via enclosed lines. (Effectiveness (of a measure): 80%).
Initial factory fill of equipment	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general or controlled ventilation (not less than 5 to 15 changes per hour).
Operation and lubrication of high energy open equipment	Avoid carrying out the operation for more than 8 hours. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings, with local exhaust ventilation (Effectiveness (of a measure): 95%).
Rolling, Brushing, Manual	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general or controlled ventilation (not less than 5 to 15 changes per hour).
Treatment by dipping and pouring	Avoid carrying out the operation for more than 8 hours. Automate activity where possible. Allow time for product to drain from workpiece. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Restrict area of openings to equipment. (Effectiveness (of a measure): 50%).
Spraying	Avoid carrying out the operation for more than 8 hours. Automate activity where possible. Carry out in a vented booth or extracted enclosure, with local exhaust ventilation (Effectiveness (of a measure): 95%). Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Wear suitable coveralls to prevent exposure to the skin. (Effectiveness (of a measure): 90%).
Maintenance (of larger plant items) and machine set up, with local exhaust ventilation.	Avoid carrying out the operation for more than 8 hours. Ensure material transfers are under containment or extract ventilation, with local exhaust ventilation (Effectiveness (of a measure): 97%).
Maintenance (of larger plant items) and machine set up, without local exhaust ventilation.	Avoid carrying out the operation for more than 8 hours. Drain or remove substance from equipment prior to break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. (Effectiveness (of a measure): 80%).
Maintenance of small items	Avoid carrying out the operation for more than 8 hours. Avoid manual contact with wet work pieces. Drain down system prior to equipment opening or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. (Effectiveness (of a measure): 80%).
Remanufacture of reject articles	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general ventilation (not less than 5 to 15 changes per hour). Ensure material transfers are under containment or extract ventilation. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage	Avoid carrying out the operation for more than 8 hours. Store substance within a closed system. Avoid dip sampling.

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Use in Lubricants
Operational Conditions	
Frequency and duration of use	Type of release: Continuous; Emission days (days/year): 20
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10

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Local marine water dilution factor	100
Other Operational Conditions of use affecting environmental exposure	Release fraction to air from process: 0.3% Release fraction to wastewater from process: 0.1% Release fraction to soil from process: 0.1%
Technical conditions and measures at process level (source) to prevent release	Bund storage facilities to prevent soil and water pollution in the event of a spillage. Prevent environmental discharge consistent with regulatory requirements.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organizational measures to prevent / limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	Size of municipal sewage system/ treatment plant (m3/d): 2000 Estimated substance removal from wastewater via domestic sewage treatment (%): 88 If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Conditions and measures related treatment of waste	Dispose of waste product or used containers according to local regulations. External treatment and disposal of waste should comply with applicable local and/or national regulations. Can be incinerated, when in compliance with local regulations. (Effectiveness (of a measure): 99.9%).

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	The ECETOC TRA tool has been used

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Section 1	Exposure Scenario: Worker
Title	Use in Lubricants, Professional
Sector of Use	SU22
Process Category	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20
Environmental release Category	ERC8a
Specific environmental release category	n/a

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Processes, tasks, activities covered	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.
Section 2	Operational conditions and risk management measures
Product characteristics	
Physical form of product	Liquid
Volatility	Vapour pressure >10 kPa
Concentration of substance in product	Up to 100%
Other product characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	n/a
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. Assumes use at not more than 20°C above ambient temperature.
Risk Management Measures	
Contributing Scenarios	Risk Management Measures
General measures (skin irritants)	If repeated and/or prolonged skin exposure to the substance is likely, wear suitable gloves tested to EN374 and provide employee skin care programs.
General exposures (closed systems)	Avoid carrying out the operation for more than 8 hours. Handle substance within a closed system.
General exposures (closed systems). Batch process, with	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Handle substance within a
sample collection.	closed system. Restrict area of openings to equipment. (Effectiveness (of a measure): 50%).
General exposures (open systems)	Avoid carrying out the operation for more than 8 hours. Provide extraction ventilation at points where emissions occur. Ensure material transfers are under containment or extract ventilation, with local exhaust ventilation (Effectiveness (of a measure): 80%).
Bulk transfers.	Avoid carrying out the operation for more than 8 hours. Transfer via closed lines. Handle substance within a closed system. (Effectiveness (of a measure): 80%).
Filling/preparation of equipment from drums or containers. Dedicated facility	Avoid carrying out the operation for more than 8 hours. Transfer via closed lines. Use drum pumps or carefully pour from container. (Effectiveness (of a measure): 80%).
Filling/preparation of equipment from drums or containers. NonDedicated facility	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Ensure operation is undertaken outdoors. Use drum pumps or carefully pour from container. Provide enhanced general ventilation by mechanical means. (Effectiveness (of a measure): 80%).
Operation and lubrication of high energy open equipment. Indoor	Avoid carrying out the operation for more than 8 hours. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings, with local exhaust ventilation (Effectiveness (of a measure): 90%).
Operation and lubrication of high energy open equipment. Outdoor	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 5%. Ensure operation is undertaken outdoors.

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Maintenance (of larger plant items) and machine set up	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general ventilation (not less than 3 to 5 changes per hour). Ensure operation is undertaken outdoors. Drain or remove substance from equipment prior to break-in or maintenance. Clear transfer lines prior to de-coupling. (Effectiveness (of a measure): 80%).
Maintenance (of larger plant items) and machine set up, elevated temperature	Avoid carrying out the operation for more than 8 hours. Provide extraction ventilation at points where emissions occur. Drain down system prior to equipment opening or maintenance. Clear transfer lines prior to de-coupling, with local exhaust ventilation (Effectiveness (of a measure): 80%).
Maintenance of small items	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general ventilation (not less than 5 to 15 changes per hour). Drain or remove substance from equipment prior to break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. (Effectiveness (of a measure): 80%).
Rolling, Brushing, Manual, with local exhaust ventilation	Avoid carrying out the operation for more than 8 hours. Provide a good standard of general or controlled ventilation (not less than 3 to 5 changes per hour). Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 80%).
Rolling, Brushing, Manual, without local exhaust ventilation	Avoid carrying out the operation for more than 8 hours. Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. (Effectiveness (of a measure): 90%).
Spraying, with local exhaust ventilation	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Carry out in a vented booth or extracted enclosure, with local exhaust ventilation (Effectiveness (of a measure): 90%).
Spraying, without local exhaust ventilation	Avoid carrying out the operation for more than 8 hours. Limit the substance content in the product to 25%. Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. Spraying. (Effectiveness (of a measure): 90%).
Treatment by dipping and pouring	Avoid carrying out the operation for more than 8 hours. Allow time for product to drain from workpiece. Provide a good standard of general ventilation (not less than 5 to 15 changes per hour).
Storage	Avoid carrying out the operation for more than 8 hours. Store substance within a closed system.

Section 2.2	Control of environmental exposure
Operational conditions	
Contributing scenario	Use in Lubricants
Operational Conditions	
Frequency and duration of use	Type of release: Continuous; Emission days (days/year): 365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other Operational Conditions of use affecting environmental exposure	Release fraction to air from process: 100% Release fraction to wastewater from process: 100% Release fraction to soil from process: 0%
Technical conditions and measures at process level (source) to prevent release	Prevent environmental discharge consistent with regulatory requirements.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Soil emissions are not applicable as there is no direct release to soil.

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Organizational measures to prevent / limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	Size of municipal sewage system/ treatment plant (m3/d): 2000 Estimated substance removal from wastewater via domestic sewage treatment (%): 88 If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Conditions and measures related treatment of waste	Dispose of waste product or used containers according to local regulations. External treatment and disposal of waste should comply with applicable local and/or national regulations. Can be incinerated, when in compliance with local regulations. (Effectiveness (of a measure): 99.9%).

Section 3	Exposure estimation
3.1 Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2 Environment	The ECETOC TRA tool has been used

Section 4	Guidance to check compliance with the Exposure Scenario
4.1 Health	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2 Environment	Not applicable for wide dispersive uses.