



Safety Data Sheet

The Dow Chemical Company

Product Name: DOWANOL* PMA GLYCOL ETHER ACETATE

Revision Date: 2011/02/14

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The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

Section 1. Identification of the substance/preparation and of the company/undertaking

1.1 Product identifiers

Product Name

DOWANOL* PMA GLYCOL ETHER ACETATE

Chemical Name: 2-Methoxy-1-methylethyl acetate

CAS-No. 108-65-6

EC-No. 203-603-9

REACH Registration Number

01-2119475791-29-0000

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

Identified uses

Industrial uses: Manufacture of substances Use as a process solvent. Formulation and (re)packing of substances and mixtures. Industrial use in coatings. Coil coatings. Industrial use in cleaning agents. Professional uses: Professional use in coatings. Professional use in cleaning agents. Professional use in agrochemicals. Consumer uses: Consumer use in coatings. Consumer use in cleaning products. Consumer use in agrochemicals.

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
48674 Midland, MI
USA

Customer Information Number: 800-258-2436

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400

Local Emergency Contact: 00 31 115 69 4982

Section 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification - REGULATION (EC) No 1272/2008

Flammable liquids	Category 3	H226	Flammable liquid and vapour.
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Classification according to EU Directives 67/548/EEC or 1999/45/EC

R10 Flammable.

2.2 Label elements

Labelling - REGULATION (EC) No 1272/2008

Hazard pictograms



Signal Word: Warning

Hazard statements:

H226 Flammable liquid and vapour.

Precautionary Statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P240 Ground/bond container and receiving equipment.

P370/P378 In case of fire: Use water fog or fine spray, foam, carbon dioxide fire extinguishers, or dry chemical fire extinguishers for extinction.

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

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

P501 Dispose of contents and container to licensed, permitted incinerator, or other thermal destruction device.

2.3 Other Hazards

No information available.

Section 3. Composition/information on ingredients

3.1 Substance

This product is a substance.

CAS-No. / EC-No. / Index	REACH No.	Amount	Component	Classification: REGULATION (EC) No 1272/2008
CAS-No. 108-65-6 EC-No. 203-603-9 Index 607-195-00-7	01- 2119475791- 29	> 99.5 %	2-Methoxy-1-methylethyl acetate	Flam. Liq., 3, H226
CAS-No. 70657-70-4 EC-No. 274-724-2	—	< 0.3 %	2-Methoxypropyl acetate	Flam. Liq., 3, H226 Repr., 1B, H360D STOT SE, 3, H335

Index
607-251-00-0

CAS-No. / EC-No. / Index	Amount	Component	Classification: 67/548/EEC
CAS-No. 108-65-6 EC-No. 203-603-9 Index 607-195-00-7	> 99.5 %	2-Methoxy-1-methylethyl acetate	R10
CAS-No. 70657-70-4 EC-No. 274-724-2 Index 607-251-00-0	< 0.3 %	2-Methoxypropyl acetate	R10; Repr. 2: R61; Xi: R37

For the full text of the H-Statements mentioned in this Section, see Section 16.
See Section 16 for full text of R-phrases.

Section 4. First-aid measures

4.1 Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin Contact: Wash skin with plenty of water.

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

4.3 Indication of immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5. Fire Fighting Measures

5.1 Extinguishing Media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

5.2 Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.

5.3 Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Eliminate ignition sources. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. No smoking in area. Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

6.2 Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

6.3 Methods and materials for containment and cleaning up: Small spills: Absorb with materials such as: Sand. Vermiculite. Collect in suitable and properly labeled containers. Large spills: Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Section 7. Handling and Storage

7.1 Precautions for safe handling

Handling

General Handling: Avoid contact with eyes. Wash thoroughly after handling. Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Electrically ground and bond all equipment. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. This product is a poor conductor of electricity and can become electrostatically charged, even in bonded or grounded equipment. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Handling operations that can promote accumulation of static charges include but are not limited to mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations.

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

Store away from direct sunlight. Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel. See Section 10 for more specific information.

7.3 Specific end uses

See the technical data sheet on this product for further information.

Section 8. Exposure Controls / Personal Protection

8.1 Control parameters**Exposure Limits**

Component	List	Type	Value
2-Methoxy-1-methylethyl acetate	Ireland OELV	TWA	275 mg/m3 50 ppm SKIN Indicative OELV
	Ireland OELV	STEL	550 mg/m3 100 ppm SKIN Indicative OELV
	EU IOELV	TWA	275 mg/m3 50 ppm SKIN
	EU IOELV	STEL	550 mg/m3 100 ppm SKIN
	UK WEL	TWA	274 mg/m3 50 ppm SKIN
	UK WEL	STEL	548 mg/m3 100 ppm SKIN
	AIHA WEEL	TWA	50 ppm

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Derived No Effect Level (DNEL)**Workers**

Potential Health Effects	Possible route(s) of exposure:	Value
Acute - systemic effects	Skin Contact	Not available
Acute - systemic effects	Inhalation	Not available
Acute - local effects	Skin Contact	Not available
Acute - local effects	Inhalation	Not available
Long-term - systemic effects	Skin Contact	153.5 mg/kg bw/day
Long-term - systemic effects	Inhalation	275 mg/m3
Long-term - local effects	Skin Contact	Not available
Long-term - local effects	Inhalation	Not available

Consumers

Potential Health Effects	Possible route(s) of exposure:	Value
Acute - systemic effects	Skin contact	Not available
Acute - systemic effects	Inhalation	Not available
Acute - systemic effects	Ingestion	Not available
Acute - local effects	Skin contact	Not available
Acute - local effects	Inhalation	Not available

Long-term - systemic effects	Skin contact	54.8 mg/kg bw/day
Long-term - systemic effects	Inhalation	33 mg/m ³
Long-term - systemic effects	Ingestion	1.67 mg/kg bw/day
Long-term - local effects	Skin contact	Not available
Long-term - local effects	Inhalation	Not available

Predicted No Effect Concentration (PNEC)

Compartment	Value	Remarks
Fresh water	0.635 mg/l	
Marine water	0.0635 mg/l	
Intermittent releases	6.35 mg/l	
STP	100 mg/l	
Fresh water sediment	3.29 mg/kg d.w.	
Marine sediment	0.329 mg/kg d.w.	
Soil	0.29 mg/kg d.w.	

8.2 Exposure controls

Personal Protection

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin Protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Chlorinated polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Viton. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge, type A (boiling point >65 °C)

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Section 9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical State	Liquid.
Color	Colorless
Odor	Ether
Odor Threshold	No test data available
pH	No test data available
Melting Point	Not applicable to liquids
Freezing Point	-66 °C <i>Literature</i>
Boiling Point (760 mmHg)	145.8 °C <i>Literature</i> .
Flash Point - Closed Cup	45.5 °C <i>ASTM D3828</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Flammable liquid
Flammable Limits In Air	Lower: 1.5 %(V) <i>Literature</i> Upper: 7.0 %(V) <i>Literature</i>
Vapor Pressure	355 Pa @ 20 °C <i>Literature</i>
Vapor Density (air = 1)	4.6 <i>Literature</i>
Specific Gravity (H₂O = 1)	0.964 <i>Literature</i>
Solubility in water (by weight)	19.8 % <i>Literature</i>
Partition coefficient, n-octanol/water (log Pow)	1.2 <i>Measured</i>
Autoignition Temperature	333 °C <i>Literature</i>
Decomposition Temperature	No test data available
Dynamic Viscosity	1.1 mPa.s @ 25 °C <i>Literature</i>
Kinematic Viscosity	1.23 mm ² /s @ 20 °C
Explosive properties	Not explosive
Oxidizing properties	No

9.2 Other information

Liquid Density	0.967 g/cm ³ @ 20 °C
Molecular Weight	132.2 g/mol <i>Literature</i>
Henry's Law Constant (H)	4.22E-06 atm*m ³ /mole Estimated.

Section 10. Stability and Reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to Avoid: Product can oxidize at elevated temperatures. Avoid static discharge. Flammable vapors can be released at elevated temperatures.

10.5 Incompatible Materials: Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong oxidizers.

10.6 Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials.

Section 11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity

Ingestion

Very low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50, Rat > 5,000 mg/kg

Aspiration hazard

Based on physical properties, not likely to be an aspiration hazard.

Dermal

Prolonged skin contact with very large amounts may cause dizziness or drowsiness.

LD50, Rabbit > 5,000 mg/kg

Inhalation

No adverse effects are anticipated from single exposure to vapor. For respiratory irritation and narcotic effects: Relevant data not available.

No deaths occurred at this concentration. LC50, 6 h, Rat > 10.8 mg/l

Eye damage/eye irritation

May cause pain disproportionate to the level of irritation to eye tissues. May cause slight eye irritation. May cause slight corneal injury.

Skin corrosion/irritation

Prolonged contact is essentially nonirritating to skin. Repeated contact may cause skin irritation with local redness.

Sensitization

Skin

Did not cause allergic skin reactions when tested in guinea pigs.

Respiratory

No relevant data found.

Repeated Dose Toxicity

In animals, effects have been reported on the following organs: Kidney. Liver. Nasal tissue.

Chronic Toxicity and Carcinogenicity

Relevant data not available.

Developmental Toxicity

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Reproductive Toxicity

Relevant data not available.

Genetic Toxicology

In vitro genetic toxicity studies were negative.

Section 12. Ecological Information

12.1 Toxicity

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: 100 - 180 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea Daphnia magna, 48 h, lethality: 408 - 500 mg/l

12.2 Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
83 %	28 d	OECD 301F Test	pass
100 %	28 d	OECD 302B Test	Not applicable

12.3 Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 1.2 Measured

12.4 Mobility in soil

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient, soil organic carbon/water (Koc): 1.7 Estimated.

Henry's Law Constant (H): 4.22E-06 atm*m3/mole Estimated.

12.5 Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

This substance is not in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

Section 13. Disposal Considerations

13.1 Waste treatment methods

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

Section 14. Transport Information

ROAD & RAIL

Proper Shipping Name: ESTERS, N.O.S.

Technical Name: 2-Methoxy-1-methylethyl acetate

Hazard Class: 3 **ID Number:** UN3272 **Packing Group:** PG III

Classification: F1

Hazard identification No: 30

Tremcard Number: 30GF1-III

Environmental Hazard: No

OCEAN

Proper Shipping Name: ESTERS, N.O.S.

Technical Name: 2-Methoxy-1-methylethyl acetate

Hazard Class: 3 **ID Number:** UN3272 **Packing Group:** PG III

EMS Number: F-E,S-D

Marine pollutant.: No

AIR

Proper Shipping Name: ESTERS, N.O.S.

Technical Name: 2-Methoxy-1-methylethyl acetate

Hazard Class: 3 ID Number: UN3272 Packing Group: PG III

Cargo Packing Instruction: 366

Passenger Packing Instruction: 355

Environmental Hazard: No

INLAND WATERWAYS

Proper Shipping Name: ESTERS, N.O.S.

Technical Name: 2-Methoxy-1-methylethyl acetate

Hazard Class: 3 ID Number: UN3272 Packing Group: PG III

Classification: F1

Hazard identification No: 30

Tremcard Number: 30GF1-III

Environmental Hazard: No

Section 15. Regulatory Information

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

European Inventory of Existing Commercial Chemical Substances (EINECS)

This product is on the EINECS inventory.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

Section 16. Other Information

Hazard statement in the composition section

H226	Flammable liquid and vapour.
H335	May cause respiratory irritation.
H360D	May damage the unborn child.

Risk-phrases in the Composition section

R10	Flammable.
R37	Irritating to respiratory system.
R61	May cause harm to the unborn child.

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure.

Revision

Identification Number: 80124 / 0000 / Issue Date 2011/02/14 / Version: 6.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

Section 1	Exposure Scenario: worker
Title	Manufacture of substance
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC1
Specific Environmental Release Category	-
Processes, tasks, activities covered	Manufacture of substance. Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Section 2	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .
Risk Management Measures	
Contributing Scenarios	
General exposures . ; Continuous process . ; (closed systems)	No other specific measures identified .
General exposures . ; Continuous process . ; With sample collection . ; (closed systems)	No other specific measures identified .
Use in contained batch processes .	No other specific measures identified .
General exposures (open systems) .	No other specific measures identified .
Process sampling . ; (closed systems)	No other specific measures identified .
Equipment cleaning and maintenance .	No other specific measures identified .
Bulk transfers . ; Dedicated facility	Clear transfer lines prior to de-coupling .
Bulk product storage ; (closed systems) [CS107	No other specific measures identified .
Laboratory activities .	No other specific measures identified .

Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 288,000
Frequency and Duration of use/exposure	Emission days (days/year): 300
Environmental factors not influenced by risk management	Local fresh water dilution factor: 19709 (measured)
Other Operational Conditions of use affecting environmental exposure	n/a
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	n/a
Conditions and measures related to external treatment of waste for disposal	n/a
Conditions and measures related to external recovery of waste	E13.21 - Biological treatment – Aerobic – For soluble biodegradable contaminants
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.
Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Use as a process solvent
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC4
Specific Environmental Release Category	ESVOC 4.21a.v1
Processes, tasks, activities covered	Use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Section 2	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .
Risk Management Measures	
Contributing Scenarios	
General exposures . ; Continuous process . ; (closed systems)	No other specific measures identified .
General exposures . ; Continuous process . ; With sample collection . ; (closed systems)	No other specific measures identified .
Use in contained batch processes .	No other specific measures identified .
General exposures (open systems) .	No other specific measures identified .
Process sampling . ; (closed systems)	No other specific measures identified .
Equipment cleaning and maintenance .	No other specific measures identified .
Bulk transfers . ; Dedicated facility	Clear transfer lines prior to de-coupling .
Bulk product storage ; (closed systems) [CS107	No other specific measures identified .
Laboratory activities .	No other specific measures identified .

Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 2200
Frequency and Duration of use/exposure	Emission days (days/year): 300
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model) STP4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 87.3
Conditions and measures related to external treatment of waste for disposal	n/a
Conditions and measures related to external recovery of waste	E13.21 - Biological treatment – Aerobic – For soluble biodegradable contaminants
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.
Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Formulation and (re)packing of substances and mixtures
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC2
Specific Environmental Release Category	CEPE 2, CEPE SPERC 2.1b.v1
Processes, tasks, activities covered	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.
Section 2	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a

Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .
Risk Management Measures	
Contributing Scenarios	
General exposures . ; Continuous process . ; No sampling . ; (closed systems)	No other specific measures identified .
General exposures . ; Continuous process . ; With sample collection . ; (closed systems)	No other specific measures identified .
General exposures . ; Use in contained batch processes . ; With sample collection .	No other specific measures identified .
General exposures (open systems) .	No other specific measures identified .
Batch processes at elevated temperatures . ; (closed systems)	No other specific measures identified .
Process sampling . ; (closed systems)	No other specific measures identified .
Bulk transfers . ; Dedicated facility ; (closed systems)	No other specific measures identified .
Bulk product storage ; (closed systems) [CS107	No other specific measures identified .
Bulk transfers . ; Dedicated facility ; (open systems)	No other specific measures identified .
Mixing operations (open systems) .	Provide a good standard of general ventilation (not less than 3-5 air changes per hour)
Transfer from/pouring from containers . ; Manual .	No other specific measures identified .
Equipment cleaning and maintenance .	No other specific measures identified .
Drum/batch transfers . ; Dedicated facility	No other specific measures identified .
Production or preparation of articles by tableting, compression, extrusion or pelletisation	No other specific measures identified .
Drum and small package filling . ; Dedicated facility	No other specific measures identified .
Bulk product storage ; (closed systems)	No other specific measures identified .
Laboratory activities .	No other specific measures identified .

Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 2100
Frequency and Duration of use/exposure	Emission days (days/year): 225
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Containment
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model) STP4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 87.3
Conditions and measures related to external treatment of waste for disposal	Dispose of waste solvent and used containers according to local regulations
Conditions and measures related to external recovery of waste	Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans). Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.
Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Industrial use in coatings (solvent based; general)
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC4
Specific Environmental Release Category	-
Processes, tasks, activities covered	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.
Section 2	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .

Risk Management Measures	
Contributing Scenarios	
General exposures (closed systems) .	No other specific measures identified .
General exposures (closed systems) . ; With sample collection .	No other specific measures identified .
Film formation - force drying (50 - 100°C). Stoving (>100°C). UV/EB radiation curing .	No other specific measures identified .
Mixing operations (closed systems) . ; General exposures (closed systems) .	No other specific measures identified .
Film formation - air drying .	No other specific measures identified .
Preparation of material for application . ; Mixing operations (open systems) .	No other specific measures identified .
Spraying (automatic/robotic) .	Carry out in a vented booth or extracted enclosure .
Spraying . ; Manual .	Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}
Material transfers . ; Non-dedicated facility	No other specific measures identified .
Material transfers . ; Dedicated facility	No other specific measures identified .
Roller, spreader, flow application .	No other specific measures identified .
Dipping, immersion and pouring .	No other specific measures identified .
Laboratory activities .	No other specific measures identified .
Material transfers . ; Drum/batch transfers . ; Transfer from/pouring from containers . ; Dedicated facility	No other specific measures identified .
Production or preparation of articles by tableting, compression, extrusion or pelletisation .	No other specific measures identified .

Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 36000
Frequency and Duration of use/exposure	Emission days (days/year): 300
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model) STP4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 87.3
Conditions and measures related to external treatment of waste for disposal	Dispose of waste solvent and used containers according to local regulations
Conditions and measures related to external recovery of waste	Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans). Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.
Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Professional use in coatings (solvent based)
Sector of Use	SU22
Process Category	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC8A, ERC8D
Specific Environmental Release Category	ESVOC 6, ESVOC SpERC 8.3b.v.1
Processes, tasks, activities covered	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.
Section 2	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .

Risk Management Measures	
Contributing Scenarios	
General exposures (closed systems) .	No other specific measures identified .
Filling / preparation of equipment from drums or containers . .	No other specific measures identified .
General exposures (closed systems) . ; Use in contained systems .	No other specific measures identified .
Preparation of material for application	No other specific measures identified .
Film formation - air drying . Outdoor	No other specific measures identified .
Film formation - air drying ; Indoor	No other specific measures identified .
Preparation of material for application ; Indoor	No other specific measures identified .
Preparation of material for application ; Outdoor	Ensure operation is undertaken outdoors .
Material transfers . ; Drum/batch transfers . ; Non-dedicated facility	No other specific measures identified .
Material transfers . ; Dedicated facility ; Drum/batch transfers .	No other specific measures identified .
Roller, spreader, flow application . ; Indoor	No other specific measures identified .
Roller, spreader, flow application ; Outdoor	No other specific measures identified .
Spraying . ; Manual . ; Indoor	Carry out in a vented booth or extracted enclosure .
Spraying . ; Manual . ; Outdoor	Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}
Dipping, immersion and pouring . ; Indoor	No other specific measures identified .
Dipping, immersion and pouring . ; Outdoor	No other specific measures identified .
Laboratory activities .	No other specific measures identified .
Hand application - fingerpaints, pastels, adhesives ; Indoor	Wear suitable gloves tested to EN374 .
Hand application - fingerpaints, pastels, adhesives ; Outdoor	Wear suitable gloves tested to EN374 .

Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 5000
Frequency and Duration of use/exposure	Emission days (days/year): 365
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model) STP4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 87.3
Conditions and measures related to external treatment of waste for disposal	Dispose of waste solvent and used containers according to local regulations
Conditions and measures related to external recovery of waste	Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans). Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.
Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Industrial use in cleaning agents
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC4
Specific Environmental Release Category	ESVOC 8, ESVOC 4.4a v1
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	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .

Risk Management Measures	
Contributing Scenarios	
General exposures (closed systems) .	No other specific measures identified .
Bulk transfers . ; Non-dedicated facility	No other specific measures identified .
Use in contained systems .; Automated process with (semi) closed systems	No other specific measures identified .
Use in contained systems .; Automated process with (semi) closed systems ; Drum/batch transfers .	No other specific measures identified .
Application of cleaning products in closed systems	No other specific measures identified .
Filling / preparation of equipment from drums or containers. .; Dedicated facility	No other specific measures identified .
Use in contained batch processes .; Treatment by heating .	No other specific measures identified .
Degreasing small objects in cleaning station .	No other specific measures identified .
Cleaning with low-pressure washers .	No other specific measures identified .
Cleaning with high pressure washers .	Provide a good standard of general ventilation (not less than 3-5 air changes per hour) . Avoid carrying out activities involving exposure for more than 4 hours . Wear suitable gloves tested to EN374 .
Cleaning .; Surfaces .; No spraying .; Manual .	No other specific measures identified .
Section 2.2	
Control of environmental exposure	
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 5000
Frequency and Duration of use/exposure	Emission days (days/year): 20
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model) STP4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 87.3
Conditions and measures related to external treatment of waste for disposal	Dispose of waste solvent and used containers according to local regulations
Conditions and measures related to external recovery of waste	Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans). Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.

Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Professional use in cleaning agents
Sector of Use	SU22
Process Category	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC8A, ERC8D
Specific Environmental Release Category	ESVOC 9, ESVOC SpERC 8.4b.v.1
Processes, tasks, activities covered	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).
Section 2	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .

Risk Management Measures	
Contributing Scenarios	
General exposures (closed systems) .	No other specific measures identified .
Filling / preparation of equipment from drums or containers. .; Dedicated facility	No other specific measures identified .
Use in contained systems .; Automated process with (semi) closed systems	No other specific measures identified .
Use in contained systems .; Automated process with (semi) closed systems ; Drum/batch transfers .	No other specific measures identified .
Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance products)	No other specific measures identified .
Filling / preparation of equipment from drums or containers. .; Non-dedicated facility ; Outdoor	Ensure operation is undertaken outdoors .
Cleaning .; Surfaces .; Manual .; Dipping, immersion and pouring .	No other specific measures identified .
Cleaning with low-pressure washers .	No other specific measures identified .
Cleaning with high pressure washers .; Indoor	Provide a good standard of controlled ventilation (10 to 15 air changes per hour) . Wear suitable gloves tested to EN374 .
Cleaning with high pressure washers .; Indoor	Limit the substance content in the product to 25% .Ensure operation is undertaken outdoors . Wear suitable gloves tested to EN374 .
Cleaning .; Surfaces .; Manual .; Spraying .	No other specific measures identified .
Ad hoc manual application via trigger sprays, dipping, etc.; Rolling, Brushing .	No other specific measures identified .
Ad hoc manual application via trigger sprays, dipping, etc.; Rolling, Brushing .	No other specific measures identified .
Application of cleaning products in closed systems	No other specific measures identified .
Cleaning of medical devices	No other specific measures identified .
Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 5000
Frequency and Duration of use/exposure	Emission days (days/year): 365
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a

Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model) STP4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 87.3
Conditions and measures related to external treatment of waste for disposal	Dispose of waste solvent and used containers according to local regulations
Conditions and measures related to external recovery of waste	Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans). Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.
Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Professional use in agrochemicals
Sector of Use	SU22
Process Category	PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC15
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC8A, ERC8D
Specific Environmental Release Category	ECPA 2, ECPA SpERC 8d.2.v1
Processes, tasks, activities covered	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.
Section 2	Operational conditions and risk management measures
Product/article characteristics	
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 25%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .
Risk Management Measures	
Contributing Scenarios	
General exposures (closed systems) .	No other specific measures identified .
Transfer from/pouring from containers . ; Dedicated facility	No other specific measures identified .
Mixing operations (open systems) . ; Outdoor	No other specific measures identified .
Spraying/fogging by manual application . ; Outdoor	Ensure operation is undertaken outdoors . Wear suitable gloves tested to EN374 .
Spraying/fogging by machine application .	Carry out in a vented booth or extracted enclosure .
Ad hoc manual application via trigger sprays, dipping, etc..	No other specific measures identified .
Equipment cleaning and maintenance .	No other specific measures identified .
Disposal of wastes . ; Outdoor	Ensure operation is undertaken outdoors .
Storage ; Outdoor	No other specific measures identified .
Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 410
Frequency and Duration of use/exposure	Emission days (days/year): 365
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	n/a

Conditions and measures related to external treatment of waste for disposal	n/a
Conditions and measures related to external recovery of waste	n/a
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	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Industrial use in coil coatings
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC4
Specific Environmental Release Category	ECCA 2, ECCA SpERC 5.1
Processes, tasks, activities covered	Covers the use in coil coatings, including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.
Section 2	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .

Risk Management Measures	
Contributing Scenarios	
General exposures (closed systems) .	No other specific measures identified .
General exposures (closed systems) .; With sample collection .	No other specific measures identified .
Film formation - force drying (50 - 100°C). Stoving (>100°C). UV/EB radiation curing .	No other specific measures identified .
Mixing operations (closed systems) .; General exposures (closed systems) .	No other specific measures identified .
Film formation - air drying .	No other specific measures identified .
Preparation of material for application .; Mixing operations (open systems) .	No other specific measures identified .
Spraying (automatic/robotic) .	Carry out in a vented booth or extracted enclosure .
Spraying .; Manual .	Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}
Material transfers .; Non-dedicated facility	No other specific measures identified .
Material transfers .; Dedicated facility	No other specific measures identified .
Roller, spreader, flow application .	No other specific measures identified .
Dipping, immersion and pouring .	No other specific measures identified .
Laboratory activities .	No other specific measures identified .
Material transfers .; Drum/batch transfers .; Transfer from/pouring from containers .; Dedicated facility	No other specific measures identified .
Section 2.2	
Control of environmental exposure	
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 5400
Frequency and Duration of use/exposure	Emission days (days/year): 220
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a
Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model) STP4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 87.3
Conditions and measures related to external treatment of waste for disposal	Dispose of waste solvent and used containers according to local regulations
Conditions and measures related to external recovery of waste	Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans). Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.

Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: worker
Title	Industrial use in coatings (solvent based; general)
Sector of Use	SU3
Process Category	PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15
Product Category	n/a
Article Category	n/a
Environmental Release Category	ERC4
Specific Environmental Release Category	CEPE 16a, CEPE SpERC 4.nb.v1
Processes, tasks, activities covered	Covers the use in inks, including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.
Section 2	storage, sampling, associated laboratory activities, maintenance and loading
Product/article characteristics	(including marine vessel/barge, road/rail car and bulk container).
Physical form of product/article	Liquid
Volatility	Low volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 100%
Other product/article characteristics	n/a
Section 2.1	Control of worker exposure
Operational conditions	
Amounts used	Not relevant for this scenario
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated)
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Assumes use at not > 20oC above ambient Assumes a good basic standard of occupational hygiene is implemented .

Risk Management Measures	
Contributing Scenarios	
General exposures (closed systems) .	No other specific measures identified .
General exposures (closed systems) .; With sample collection .	No other specific measures identified .
Film formation - force drying (50 - 100°C). Stoving (>100°C). UV/EB radiation curing .	No other specific measures identified .
Mixing operations (closed systems) .; General exposures (closed systems) .	No other specific measures identified .
Film formation - air drying .	No other specific measures identified .
Preparation of material for application .; Mixing operations (open systems) .	No other specific measures identified .
Spraying (automatic/robotic) .	Carry out in a vented booth or extracted enclosure .
Spraying .; Manual .	Wear a respirator conforming to EN140 with Type A/P2 filter or better {PPE29}
Material transfers .; Non-dedicated facility	No other specific measures identified .
Material transfers .; Dedicated facility	No other specific measures identified .
Roller, spreader, flow application .	No other specific measures identified .
Dipping, immersion and pouring .	No other specific measures identified .
Laboratory activities .	No other specific measures identified .
Material transfers .; Drum/batch transfers .; Transfer from/pouring from containers .; Dedicated facility	No other specific measures identified .
Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily site tonnage (kg/day): 1100
Frequency and Duration of use/exposure	Emission days (days/year): 300
Environmental factors not influenced by risk management	Local fresh water dilution factor: 10 Local marine water dilution factor: 100
Other Operational Conditions of use affecting environmental exposure	n/a

Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model) STP4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 87.3
Conditions and measures related to external treatment of waste for disposal	Dispose of waste solvent and used containers according to local regulations
Conditions and measures related to external recovery of waste	Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans). Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.
Other environmental control measures additional to above	Vapour recovery units should be used when necessary.
Section 3	Exposure Estimation
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
3.2. Environment	
EUSES version 2.1. 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/reeach-for-industries-libraries.html).	

Section 1	Exposure Scenario: consumer
Title	Consumer use in coatings
Sector of Use	SU21
Process Category	n/a
Product Category	PC9a coatings and paints, PC 18 printing ink and toners
Article Category	n/a
Environmental Release Category	ERC8a, ERC8d
Specific Environmental Release Category	ESVOC 7 , ESVOC SpERC 8.3c.v.1
Processes, tasks, activities covered	Covers the use in coatings, paints, and inks including exposures during use (including product mixing, application by brush or rolling, printing, and equipment cleaning).
Section 2	Operational conditions and risk management measures
Product/article characteristics	
Physical form of product/article	Liquid
Volatility	High volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 10% in coatings and paints; up to 45% in printing ink and toners.
Other product/article characteristics	n/a
Section 2.1	Control of consumer exposure
Operational conditions	

Amounts used	Up to 1000 g in coatings and paints; up to 40 g in ink and toners
Frequency and duration of use	One event per day for up to 2.2 hr; typically one painting event per year; one event every day for up to 0.5 hr for changing printer cartridge.
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Paint application at ambient temperature in room size of at least 20 m ³ with open doors and open windows. Ambient temperature with typical ventilation for changing printer cartridge.
Risk Management Measures	
Product (sub) Categories	
Solvent borne coatings and paints	Avoid using at a product concentration greater than 10%, avoid using a product amount greater than 1000 grams more than one time per day for greater than 2.2 hours. Avoid using in room with closed doors and closed windows.
Use in printing inks and toners including handling of ink cartridges.	Covers substance concentrations up to 45% for use up to 40 g/d and exposure up to 0.5 hour/d.
Section 2.2	Control of environmental exposure
Operational conditions	
Amounts used	Maximum daily tonnage (kg/day): 0.52
Frequency and Duration of use/exposure	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	n/a

Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model)
Conditions and measures related to external treatment of waste for disposal	n/a
Conditions and measures related to external recovery of waste	Dispose of waste cans and containers according to local regulations.
Other environmental control measures additional to above	Do not pour down the drain. Prevent exposure of soil using protective covers
Section 3	Exposure Estimation
3.1. Health	
The ConsExpo tool has been used to estimate consumer exposures unless otherwise indicated. When the recommended risk management measures and operational conditions are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.	
3.2. Environment	
EUSES version 2.1. 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	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>	
4.2. Environment	
<p>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/reeach-for-industries-libraries.html).</p>	

Section 1	Exposure Scenario: consumer
Title	Consumer use in cleaning products
Sector of Use	SU21
Process Category	n/a
Product Category	PC35
Article Category	n/a
Environmental Release Category	ERC8A, 8D
Specific Environmental Release Category	ESVOC 10 , ESVOC SpERC 8.4.v1
Processes, tasks, activities covered	Covers the use in washing and cleaning products including spraying and wiping.
Section 2	Operational conditions and risk management measures
Product/article characteristics	
Physical form of product/article	Liquid
Volatility	High volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 10%
Other product/article characteristics	n/a
Section 2.1	Control of consumer exposure
Operational conditions	
Amounts used	Up to 16 g per event. Maximum of three events up to 48 g.
Frequency and duration of use	One event per day for up to 1 hr; 365 days per year. Maximum of 3 events per day for up to 3 hr.
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Use at ambient temperatures in room size of at least 15 m3 with typical household ventilation.
Risk Management Measures	
Product (sub) Categories	
Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) spraying and wiping	Covers substance concentrations up to 10% for use up to 16 g and up to 1 hour exposure per day.
Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) spraying and wiping for a maximum of three events per day	Covers substance concentrations up to 10% for use up to 48 g and up to 3 hours exposure per day.

Section 2.2	
Operational conditions	
Amounts used	Maximum daily tonnage (kg/day): 0.27
Frequency and Duration of use/exposure	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	n/a

Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	STP: 3 Estimated substance removal from wastewater via domestic sewage treatment (%): 87.3 (default from Simple treat model)
Conditions and measures related to external treatment of waste for disposal	n/a
Conditions and measures related to external recovery of waste	n/a
Other environmental control measures additional to above	n/a
Section 3	Exposure Estimation
3.1. Health	
<p>The ConsExpo tool has been used to estimate consumer exposures unless otherwise indicated. When the recommended risk management measures and operational conditions are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.</p>	
3.2. Environment	
<p>EUSES version 2.1. 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.</p>	
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>	
4.2. Environment	
<p>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/reeach-for-industries-libraries.html).</p>	

Section 1	Exposure Scenario: consumer
Title	Consumer use in agrochemicals
Sector of Use	SU21
Process Category	n/a
Product Category	PC27
Article Category	n/a
Environmental Release Category	ERC8A, ERC 8D
Specific Environmental Release Category	ECPA SpERC 8d.2.v1
Processes, tasks, activities covered	Covers the consumer use as a solvent or co-formulant in agrochemicals including plant protection products.
Section 2	Operational conditions and risk management measures
Product/article characteristics	
Physical form of product/article	Liquid
Volatility	High volatility
Dustiness	n/a
Concentration in a preparation/product (w/w%)	Up to 70%
Other product/article characteristics	n/a
Section 2.1	Control of consumer exposure
Operational conditions	
Amounts used	Up to 137g per event
Frequency and duration of use	1 One event per day for up to 6 minutes of spraying with an aerosol can or trigger sprayer; 365 days per year.
Human factors not influenced by risk management	None identified for this scenario.
Other Operational Conditions affecting exposure	Use at ambient temperatures in room size of at least 20 m3 with typical household ventilation.
Risk Management Measures	
Product (sub) Categories	
Covers the consumer use of agrochemical products applied by spraying using aerosol spray can or trigger spray.	Covers substance concentrations up to 70% for use up to 137 g and up to 6 minutes of spraying per day.
Section 2.2	
Operational conditions	
Amounts used	Maximum daily tonnage (kg/day): 410
Frequency and Duration of use/exposure	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	n/a

Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	n/a
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	n/a
Organisation measures to prevent/limit release from site	n/a
Conditions and measures related to municipal sewage treatment plant	n/a
Conditions and measures related to external treatment of waste for disposal	n/a
Conditions and measures related to external recovery of waste	n/a
Other environmental control measures additional to above	n/a
Section 3	Exposure Estimation
3.1. Health	
<p>The ConsExpo tool has been used to estimate consumer exposures unless otherwise indicated. When the recommended risk management measures and operational conditions are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.</p>	
3.2. Environment	
<p>EUSES version 2.1. 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.</p>	
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>	
4.2. Environment	
<p>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/reeach-for-industries-libraries.html).</p>	