



SAFETY DATA SHEET IND DEN ALCOHOL INEOS

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

1.1. Product identifier

Product name	IND DEN ALCOHOL INEOS
Product number	57188
Synonyms; trade names	IND DEN ALCOHOL 99, IND DEN ALCOHOL 99 TECH, IND METHYLATED SPIRIT T100, IDA 99, IDA 99 TECH, ETHANOL 96% + 5% METHANOL, ETHANOL 96% + 5% MEOH, IND DEN ALCOHOL 99 INEOS, IND DEN ALCOHOL P99

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

Identified uses	Industrial Solvent For further information, see attached Exposure Scenario.
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	57188

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Flam. Liq. 2 - H225
Health hazards	Eye Irrit. 2 - H319 STOT SE 2 - H371
Environmental hazards	Not Classified

2.2. Label elements

Hazard pictograms



Signal word

Danger

IND DEN ALCOHOL INEOS

Hazard statements	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation. H371 May cause damage to organs .
Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor. P403+P235 Store in a well-ventilated place. Keep cool.
Contains	METHANOL

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Vapours may form explosive mixtures with air. Take care as floors and other surfaces may become slippery.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

ETHANOL	95 - 96%
CAS number: 64-17-5	EC number: 200-578-6
	REACH registration number: 01-2119457610-43-XXXX
Classification Flam. Liq. 2 - H225 Eye Irrit. 2 - H319	
METHANOL	3 - 4%
CAS number: 67-56-1	EC number: 200-659-6
	REACH registration number: 01-2119433307-44-XXXX
Classification Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 STOT SE 1 - H370	

The full text for all hazard statements is displayed in Section 16.

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	First aid personnel should wear appropriate protective equipment during any rescue. If medical advice is needed, have product container or label at hand.
Inhalation	Move affected person to fresh air at once. Get medical attention.

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Ingestion	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately.
Skin contact	Remove contaminated clothing and rinse skin thoroughly with water. Get medical attention if symptoms are severe or persist after washing.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist after washing.

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

General information	May cause damage to organs .
Inhalation	Vapours may cause headache, fatigue, dizziness and nausea. Gas or vapour in high concentrations may irritate the respiratory system.
Ingestion	May cause nausea, headache, dizziness and intoxication.
Eye contact	Causes serious eye irritation.

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

Notes for the doctor	Treat symptomatically. Development of symptoms may be delayed for 24 to 48 hours. Keep affected person under observation.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Highly flammable liquid and vapour. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Take care as floors and other surfaces may become slippery.
Hazardous combustion products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Formaldehyde

5.3. Advice for firefighters

Protective actions during firefighting	Avoid the spillage or runoff entering drains, sewers or watercourses. Contain and collect extinguishing water. Use water to keep fire exposed containers cool and disperse vapours.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Keep unnecessary and unprotected personnel away from the spillage. No action shall be taken without appropriate training or involving any personal risk. Take precautionary measures against static discharges. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage. Use only non-sparking tools. Use explosion-proof electrical equipment. Take care as floors and other surfaces may become slippery.
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6.2. Environmental precautions

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Environmental precautions Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Absorb spillage with inert, damp, non-combustible material. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid inhalation of vapours and contact with skin and eyes. Keep away from heat, sparks and open flame. Ground/bond container and receiving equipment. Take precautionary measures against static discharges. Use only non-sparking tools. Use explosion-proof electrical equipment. Avoid the formation of mists. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Remove contaminated clothing and protective equipment before entering eating areas. Provide eyewash station and safety shower. Take off immediately all contaminated clothing and wash it before reuse. Wash after use and before eating, smoking and using the toilet.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Storage tanks and other containers must be earthed. Use explosion-proof electrical equipment. Keep away from food, drink and animal feeding stuffs. Avoid contact with the following materials: Oxidising agents. Alkali metals. Acids. Acid anhydrides. Aluminium.

Storage class Flammable liquid storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

ETHANOL

Long-term exposure limit (8-hour TWA): WEL 1000 ppm 1920 mg/m³

METHANOL

Sk

Long-term exposure limit (8-hour TWA): WEL 200 ppm 266 mg/m³

Short-term exposure limit (15-minute): WEL 250 ppm 333 mg/m³

WEL = Workplace Exposure Limit.

Sk = Can be absorbed through the skin.

ETHANOL (CAS: 64-17-5)

IND DEN ALCOHOL INEOS

Ingredient comments

WEL = Workplace Exposure Limits

DNEL

Workers - Inhalation; Long term systemic effects: 950 mg/m³
 Workers - Inhalation; Short term local effects: 1900 mg/m³
 Workers - Dermal; Long term systemic effects: 343 mg/kg/day
 General population - Inhalation; Long term systemic effects: 114 mg/m³
 General population - Inhalation; Short term local effects: 950 mg/m³
 General population - Dermal; Long term systemic effects: 206 mg/kg/day
 General population - Oral; Long term systemic effects: 87 mg/kg/day

PNEC

- Fresh water; 0.96 mg/l
 - marine water; 0.79 mg/l
 - Intermittent release; 2.75 mg/l
 - STP; 580 mg/l
 - Sediment (Freshwater); 3.6 mg/kg
 - Sediment (Marinewater); 2.9 mg/kg
 - Soil; 0.63 mg/kg

METHANOL (CAS: 67-56-1)

DNEL

Workers - Inhalation; Long term systemic effects: 130 mg/m³
 Workers - Inhalation; Short term systemic effects: 130 mg/m³
 Workers - Inhalation; Long term local effects: 130 mg/m³
 Workers - Inhalation; Short term local effects: 130 mg/m³
 Workers - Dermal; Long term systemic effects: 20 mg/m³
 Workers - Dermal; Long term systemic effects: 20 mg/kg/day
 General population - Inhalation; Long term systemic effects: 26 mg/m³
 General population - Inhalation; Short term systemic effects: 26 mg/m³
 General population - Inhalation; Long term local effects: 26 mg/m³
 General population - Inhalation; Short term local effects: 26 mg/m³
 General population - Dermal; Long term systemic effects: 5 mg/kg/day
 General population - Dermal; Short term systemic effects: 5 mg/kg/day
 General population - Oral; Long term systemic effects: 5 mg/kg/day
 General population - Oral; Short term systemic effects: 5 mg/kg/day

DMEL

Workers - Dermal; Long term systemic effects: 40 mg/kg/day

PNEC

- Fresh water; 20.8 mg/l
 - marine water; 2.08 mg/l
 - Intermittent release; 1540 mg/l
 - STP; 100 mg/l
 - Sediment (Freshwater); 77 mg/kg
 - Sediment (Marinewater); 7.7 mg/kg
 - Soil; 100 mg/kg

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Use explosion-proof electrical equipment. Observe any occupational exposure limits for the product or ingredients. Provide eyewash station and safety shower.

IND DEN ALCOHOL INEOS

Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Butyl rubber. Protective gloves should have a minimum thickness of 0.5 mm. The selected gloves should have a breakthrough time of at least 8 hours. Frequent changes are recommended. To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact. Wear anti-static protective clothing if there is a risk of ignition from static electricity.
Hygiene measures	When using do not eat, drink or smoke. Wash after use and before eating, smoking and using the toilet. Take off immediately all contaminated clothing and wash it before reuse. Remove contaminated clothing and protective equipment before entering eating areas.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Gas filter, type A2. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Alcoholic.
Odour threshold	No information available.
pH	pH (concentrated solution): 7
Melting point	-114°C
Initial boiling point and range	78.2°C
Flash point	12°C
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 3.5 % Upper flammable/explosive limit: 15 %
Other flammability	No information available.
Vapour pressure	58.5 hPa @ 20°C 78.7 hPa @ 25°C
Vapour density	1.03
Relative density	No information available.
Bulk density	789 kg/m ³

IND DEN ALCOHOL INEOS

Solubility(ies)	Completely soluble in water.
Partition coefficient	log Pow: -0.35
Auto-ignition temperature	363°C
Decomposition Temperature	No information available.
Viscosity	1.19 mPa s @ 20°C
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	No information available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	The following materials may react with the product: Oxidising materials. Acids. Alkali metals. Acid anhydrides. Aluminium.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back.
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10.4. Conditions to avoid

Conditions to avoid	Avoid heat, flames and other sources of ignition. Take precautionary measures against static discharges.
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10.5. Incompatible materials

Materials to avoid	Oxidising agents. Acids. Alkali metals. Acid anhydrides. Aluminium.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg)	2,500.0
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Acute toxicity - dermal

ATE dermal (mg/kg)	7,500.0
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Acute toxicity - inhalation

ATE inhalation (vapours mg/l)	75.0
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Skin corrosion/irritation

Skin corrosion/irritation	Based on available data the classification criteria are not met.
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Serious eye damage/irritation

IND DEN ALCOHOL INEOS

Serious eye damage/irritation Causes serious eye irritation.

Skin sensitisation

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

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

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

Reproductive toxicity

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

Specific target organ toxicity - single exposure

STOT - single exposure May cause damage to organs .

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

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

Inhalation Vapours may cause headache, fatigue, dizziness and nausea. Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion May cause nausea, headache, dizziness and intoxication.

Skin contact Skin irritation should not occur when used as recommended.

Eye contact Causes serious eye irritation.

Acute and chronic health hazards May cause damage to organs .

Toxicological information on ingredients.

ETHANOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 10,470.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 15,800.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 20.0

Species Rat

ATE inhalation (vapours mg/l) 20.0

IND DEN ALCOHOL INEOS

Skin corrosion/irritation

Animal data Not irritating. Rabbit OECD 404

Serious eye damage/irritation

Serious eye damage/irritation Irritating. Rabbit OECD 405

Respiratory sensitisation

Respiratory sensitisation Not sensitising.

Skin sensitisation

Skin sensitisation Not sensitising. Mouse OECD 429

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

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

Reproductive toxicity

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

Specific target organ toxicity - single exposure

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

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

Aspiration hazard No information available.

Inhalation Vapours in high concentrations are narcotic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Nausea, vomiting.

Ingestion Ingestion of large amounts may cause unconsciousness. May cause nausea, headache, dizziness and intoxication.

Skin contact Prolonged contact may cause dryness of the skin.

Eye contact Causes serious eye irritation.

METHANOL

Acute toxicity - oral

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

ATE dermal (mg/kg) 300.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 3.0

Species Rat

IND DEN ALCOHOL INEOS

ATE inhalation (vapours
mg/l) 3.0

Skin corrosion/irritation

Skin corrosion/irritation Not irritating. Rabbit

Serious eye damage/irritation

Serious eye
damage/irritation Not irritating. Rabbit

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative. Gene mutation: Negative.

Genotoxicity - in vivo DNA damage and/or repair: Negative. Mouse

Carcinogenicity

Carcinogenicity NOAEL 466 mg/kg/day, Oral, Rat

Reproductive toxicity

Reproductive toxicity -
fertility No information available.

Reproductive toxicity -
development Embryotoxicity: - : , Oral, Mouse Negative. Fetotoxicity: - : , Oral, Mouse Positive.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 1 - H370

Target organs Central nervous system Eyes

Specific target organ toxicity - repeated exposure

STOT - repeated exposure LOAEL 2340 mg/kg, Oral, Monkey NOAEL 1.06 mg/l, Inhalation, Rat 90 days

Target organs Eyes Central nervous system

Aspiration hazard

Aspiration hazard No information available.

Inhalation Toxic by inhalation. Drowsiness, dizziness, disorientation, vertigo.

Ingestion Toxic if swallowed. May cause unconsciousness, blindness and possibly death.

Skin contact Toxic in contact with skin.

Eye contact May cause temporary eye irritation.

Target organs Kidneys Liver Heart & cardiovascular system

Medical considerations Liver and/or kidney damage.

SECTION 12: Ecological information

IND DEN ALCOHOL INEOS

Ecotoxicity The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.

Ecological information on ingredients.

ETHANOL

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

METHANOL

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.1. Toxicity

Toxicity No information available.

Ecological information on ingredients.

ETHANOL

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 48 hours: > 100 mg/l, Leuciscus idus (Golden orfe)
LC₅₀, 96 hour: 14200 mg/l, Pimephales promelas (Fat-head Minnow)
LC₅₀, 96 hour: 13000 mg/l, Oncorhynchus mykiss (Rainbow trout)
LC₅₀, 96 hour: 12000 - 16000 mg/l, Oryzias latipes (Red killifish)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 12340 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 48 hours: > 100 mg/l, Selenastrum capricornutum
EC₅₀, 72 hour: 275 mg/l,
(Chlorella vulgaris)

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates NOEC, 9 day: 9.6 mg/l, Daphnia magna

METHANOL

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 15400 mg/l, Lepomis macrochirus (Bluegill)
NOEC, 200 hour: 15800 mg/l, Oryzias latipes (Red killifish)
LC₅₀, 96 hour: > 100 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: > 10000 mg/l, Daphnia magna
EC₅₀, 96 hour: 22200 - 23400 mg/l, Freshwater invertebrates
Daphnia obtusa - Neonate
EC₅₀, 48 hour: 2500 mg/l, Marinewater invertebrates
Crangon Crangon (Common sand shrimp)

IND DEN ALCOHOL INEOS

Acute toxicity - aquatic plants	EC ₅₀ , 96 hours: 22000 mg/l, Selenastrum capricornutum
	EC ₅₀ , 96 hour: 16.912 mg/l, Marinewater algae
	Ulva pertusa
	Chronic, NOEC, 96 hour: 9.96 mg/l, Marinewater algae
Acute toxicity - microorganisms	Ulva pertusa
	IC ₅₀ , 15 hour: 20000 mg/l,
	IC ₅₀ , 3 hour: > 1000 mg/l,

12.2. Persistence and degradability

Persistence and degradability Expected to be readily biodegradable.

Ecological information on ingredients.

ETHANOL

Persistence and degradability	The product is readily biodegradable. The product is degraded completely by photochemical oxidation.
Biodegradation	- Degradation 84%: 20 day - Half-life : 1 - <10 days

METHANOL

Persistence and degradability	The product is readily biodegradable.
Biodegradation	Water - Degradation (%) 71.5: 5 days Water - Degradation (%) 95: 20 days

12.3. Bioaccumulative potential

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: -0.35

Ecological information on ingredients.

ETHANOL

Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient	log Pow: - 0.31

METHANOL

Bioaccumulative potential	The product is not bioaccumulating. BCF: < 10, Leuciscus idus (Golden orfe)
Partition coefficient	log Pow: -0.82 / -0.66

12.4. Mobility in soil

Mobility The product is soluble in water.

Ecological information on ingredients.

ETHANOL

Mobility	The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces. The product is water-soluble and may spread in water systems.
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IND DEN ALCOHOL INEOS

METHANOL

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

ETHANOL

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

METHANOL

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects No information available.

Ecological information on ingredients.

ETHANOL

Other adverse effects The product contains volatile organic compounds (VOCs) which have a photochemical ozone creation potential.

METHANOL

Cod 1.42

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste is classified as hazardous waste. Highly flammable liquid and vapour. Do not puncture or incinerate, even when empty. Do not cut or weld used containers unless they have been thoroughly cleaned internally. Materials such as cleaning rags and paper wipes that are contaminated with flammable liquids may self-ignite after use and should be stored in designated fireproof containers with tight-fitting, self-closing lids.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	1170
UN No. (IMDG)	1170
UN No. (ICAO)	1170
UN No. (ADN)	1170

14.2. UN proper shipping name

IND DEN ALCOHOL INEOS

Proper shipping name (ADR/RID) ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

Proper shipping name (IMDG) ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

Proper shipping name (ICAO) ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

Proper shipping name (ADN) ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

14.3. Transport hazard class(es)

ADR/RID class 3

ADR/RID classification code F1

ADR/RID label 3

IMDG class 3

ICAO class/division 3

ADN class 3

Transport labels



14.4. Packing group

ADR/RID packing group II

IMDG packing group II

ICAO packing group II

ADN packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

EmS F-E, S-D

ADR transport category 2

Emergency Action Code •2YE

Hazard Identification Number (ADR/RID) 33

Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

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

IND DEN ALCOHOL INEOS

EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015.

This product may impact SEVESO storage regulations.

Restrictions (Annex XVII Regulation 1907/2006)

This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 69

Seveso Directive - Control of major accident hazards P5c

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

Canada - DSL/NDSL

All the ingredients are listed or exempt.
DSL

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - ENCS

All the ingredients are listed or exempt.
ENCS

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines – PICCS

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

SECTION 16: Other information

IND DEN ALCOHOL INEOS

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

17/01/2022

Version number

1.002

Supersedes date

15/08/2019

SDS number

57188

IND DEN ALCOHOL INEOS

SDS status	Approved.
Hazard statements in full	H225 Highly flammable liquid and vapour. H301 Toxic if swallowed. H311 Toxic in contact with skin. H319 Causes serious eye irritation. H331 Toxic if inhaled. H370 Causes damage to organs . H371 May cause damage to organs .
Signature	J Spenceley

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



Exposure scenario

Industrial manufacturing of Ethanol, or use as intermediate or process chemical

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial manufacturing of Ethanol, or use as intermediate or process chemical
Process scope	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals

Environment

Environmental release category	ERC1 Manufacture of the substance ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC6a Use of intermediate
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
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Industrial manufacturing of Ethanol, or use as intermediate or process chemical

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Annual amount per site: 400000 tonnes
Annual amount used in the EU: 4600000 tonnes

Frequency and duration of use

Continuous.
Emission days: 350 days/year

Environmental factors not influenced by risk management measures

Dilution	Receiving water dilution (fresh or marine): 18000 m ³ /day
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Risk management measures

Good practice	Carefully handle the substance to minimise releases.
Technical measures	Bund storage facilities to prevent soil and water pollution in the event of spillage. When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day Removal efficiency (total): 90%

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of 70%.
Water	Typical onsite wastewater treatment technology provides removal efficiency of 87%.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Sludge is disposed of or recovered.
Disposal method	Contain and dispose of waste according to local regulations. Incineration, disposal or recycling at specific offsite provider.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	5.73 kPa @ 20°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Industrial manufacturing of Ethanol, or use as intermediate or process chemical

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Palm of both hands. Covers skin contact area up to 480 cm ² . PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Both hands. Covers skin contact area up to 960 cm ² .
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Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at ambient temperature (unless stated differently).

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

Technical protective measures	Handle substance within a predominantly closed system provided with extract ventilation. Ensure material transfers are under containment or extract ventilation. Provide extract ventilation at the points where emissions occur.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.
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Risk management measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental exposure	STP: Exposure 5.65 mg/l, PNEC 580 mg/l, RCR 0.0097 Fresh water: Exposure 0.0000264 mg/l, PNEC 0.96 mg/l, RCR 0.0000275 Soil: Exposure 0.00119 mg/kg, PNEC 0.63 mg/kg, RCR 0.00189 Marine water: Exposure 0.00000224 mg/l, PNEC 0.79 mg/l, RCR 0.000002835

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation: Exposure 96.04 mg/m ³ , DNEL 950 mg/m ³ , RCR 0.101 Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.040 Worker - all relevant routes: Exposure 27.43 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.080 Worst case assumption



Exposure scenario Distribution of Ethanol

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Distribution of Ethanol
Process scope	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals
<u>Environment</u>	
Environmental release category	ERC2 Formulation into mixture
<u>Worker</u>	
Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Distribution of Ethanol

Amounts used

Annual amount per site: 75000 tonnes
Annual amount used in the EU: 3800000 tonnes

Frequency and duration of use

Continuous.
Emission days: 300 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Bund storage facilities to prevent soil and water pollution in the event of spillage. When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations. Incineration, disposal or recycling at specific offsite provider.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at ambient temperature (unless stated differently).

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

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

Technical protective measures Ensure material transfers are under containment or extract ventilation. Provide extract ventilation at the points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Distribution of Ethanol

Risk management measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection.

3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 4.66 mg/l, PNEC 580 mg/l, RCR 0.0080 Fresh water: Exposure 0.52 mg/l, PNEC 0.96 mg/l, RCR 0.542 Soil: Exposure 0.007 mg/kg, PNEC 0.63 mg/kg, RCR 0.00111 Marine water: Exposure 0.0515 mg/l, PNEC 0.79 mg/l, RCR 0.0652

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation: Exposure 96.04 mg/m ³ , DNEL 950 mg/m ³ , RCR 0.101 Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.040 Worker - all relevant routes: Exposure 27.43 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.080 Worst case assumption



Exposure scenario

Industrial formulation and (re)packing of Ethanol and it's mixtures

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial formulation and (re)packing of Ethanol and it's mixtures
Process scope	Formulation of the substance and its mixtures in batch or continuous operations within closed or contained systems, including incidental exposures during storage, materials transfers, mixing, maintenance, sampling and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC2 Formulation into mixture
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Worker

Process category	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14 Tableting, compression, extrusion, pelletisation, granulation
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Industrial formulation and (re)packing of Ethanol and it's mixtures

Physical state Liquid

Concentration details Covers concentrations up to 100 %.

Amounts used

Annual amount per site: 280000 tonnes

Annual amount used in the EU: 3800000 tonnes

Frequency and duration of use

Continuous.

Emission days: 300 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Bund storage facilities to prevent soil and water pollution in the event of spillage. When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations. Incineration, disposal or recycling at specific offsite provider.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of both hands. Covers skin contact area up to 480 cm².
PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14 Tableting, compression, extrusion, pelletisation, granulation Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Industrial formulation and (re)packing of Ethanol and it's mixtures

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

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

Technical protective measures Ensure material transfers are under containment or extract ventilation. Provide extract ventilation at the points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection.

3. Exposure estimation (Environment 1)

Assessment method ECETOC TRA v2.0 Environment

Environmental exposure STP: Exposure 1.73 mg/l, PNEC 580 mg/l, RCR 0.00298
Fresh water: Exposure 0.185 mg/l, PNEC 0.96 mg/l, RCR 0.193
Soil: Exposure 0.0117 mg/kg, PNEC 0.63 mg/kg, RCR 0.0186
Marine water: Exposure 0.0186 mg/l, PNEC 0.79 mg/l, RCR 0.0235

3. Exposure estimation (Health 1)

Assessment method ECETOC TRA v2.0 Worker

Exposure Worker - inhalation: Exposure 96.04 mg/m³, DNEL 950 mg/m³, RCR 0.101
Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.040
Worker - all relevant routes: Exposure 27.43 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.080
Worst case assumption



Exposure scenario

Industrial use of Ethanol in non-spray applications

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial use of Ethanol in non-spray applications Dipping, immersion and pouring Treatment by dipping and pouring Roller, spreader, flow application
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
<u>Worker</u>	
Process category	PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Regional use tonnage: 2750 tonnes/year
Annual amount used in the EU: 27500 tonnes

Frequency and duration of use

Industrial use of Ethanol in non-spray applications

Continuous.
Emission days: 300 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Bund storage facilities to prevent soil and water pollution in the event of spillage. When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations. Incineration, disposal or recycling at specific offsite provider.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm².
PROC10 Roller application or brushing Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Ventilation rate Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. , or: Ensure operation is undertaken outdoors.

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

Technical protective measures Ensure material transfers are under containment or extract ventilation. Provide extract ventilation at the points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Industrial use of Ethanol in non-spray applications

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection.

3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.285 mg/l, PNEC 580 mg/l, RCR 0.000491 Fresh water: Exposure 0.039 mg/l, PNEC 0.96 mg/l, RCR 0.0406 Soil: Exposure 0.0091 mg/kg, PNEC 0.63 mg/kg, RCR 0.0144 Marine water: Exposure 0.0039 mg/l, PNEC 0.79 mg/l, RCR 0.00494

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation: Exposure 96.04 mg/m ³ , DNEL 950 mg/m ³ , RCR 0.101 Worker - dermal: Exposure 27.43 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.080 Worker - all relevant routes: Exposure 41.15 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.120 Worst case assumption



Exposure scenario

Industrial use of Ethanol in spray applications

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial use of Ethanol in spray applications Spraying
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
<u>Worker</u>	
Process category	PROC7 Industrial spraying

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Regional use tonnage: 2750 tonnes/year
Annual amount used in the EU: 27500 tonnes

Frequency and duration of use

Continuous.
Emission days: 300 days/year

Industrial use of Ethanol in spray applications

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Bund storage facilities to prevent soil and water pollution in the event of spillage. When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations. Incineration, disposal or recycling at specific offsite provider.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 25 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

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

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

Technical protective measures Ensure material transfers are under containment or extract ventilation. Provide extract ventilation at the points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Industrial use of Ethanol in spray applications

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Use suitable eye protection.

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

, or:

Carry out in a vented booth provided with laminar airflow.

3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.285 mg/l, PNEC 580 mg/l, RCR 0.000491 Fresh water: Exposure 0.039 mg/l, PNEC 0.96 mg/l, RCR 0.0406 Soil: Exposure 0.0091 mg/kg, PNEC 0.63 mg/kg, RCR 0.0144 Marine water: Exposure 0.0039 mg/l, PNEC 0.79 mg/l, RCR 0.00494

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation: Exposure 480.21 mg/m ³ , DNEL 950 mg/m ³ , RCR 0.505 Worker - dermal: Exposure 42.86 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.125 Worker - all relevant routes: Exposure 111.46 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.325 Worst case assumption



Exposure scenario

Industrial use of Ethanol as fuel source

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial use of Ethanol as fuel source
Process scope	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC7 Use of functional fluid at industrial site
<u>Worker</u>	
Process category	PROC16 Use of fuels

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Regional use tonnage: 30000 tonnes/year
Annual amount used in the EU: 300000 tonnes

Frequency and duration of use

Continuous.
Emission days: 300 days/year

Industrial use of Ethanol as fuel source

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations. Incineration, disposal or recycling at specific offsite provider.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

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

Technical protective measures No specific risk management measure identified beyond those operational conditions stated.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

No specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method ECETOC TRA v2.0 Environment

Environmental exposure STP: Exposure 0.053 mg/l, PNEC 580 mg/l, RCR 0.0000914
Fresh water: Exposure 0.0152 mg/l, PNEC 0.96 mg/l, RCR 0.000158
Soil: Exposure 0.0006 mg/kg, PNEC 0.63 mg/kg, RCR 0.000952
Marine water: Exposure 0.0016 mg/l, PNEC 0.79 mg/l, RCR 0.00203

Industrial use of Ethanol as fuel source

3. Exposure estimation (Health 1)

Assessment method ECETOC TRA v2.0 Worker

Exposure Worker - inhalation: Exposure 9.6 mg/m³, DNEL 950 mg/m³, RCR 0.0101
Worker - dermal: Exposure 0.3 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.000875
Worker - all relevant routes: Exposure 1.7 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.00496
Worst case assumption



Exposure scenario

Professional use of Ethanol as fuel source

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Professional use of Ethanol as fuel source
Process scope	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
<u>Worker</u>	
Process category	PROC16 Use of fuels

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Regional use tonnage: 380000 tonnes/year
Annual amount used in the EU: 3800000 tonnes

Frequency and duration of use

Continuous.
Emission days: 365 days/year

Professional use of Ethanol as fuel source

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations. Incineration, disposal or recycling at specific offsite provider.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

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

Technical protective measures No specific risk management measure identified beyond those operational conditions stated.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

No specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method ECETOC TRA v2.0 Environment

Environmental exposure STP: Exposure 0.065 mg/l, PNEC 580 mg/l, RCR 0.000112
Fresh water: Exposure 0.0240 mg/l, PNEC 0.96 mg/l, RCR 0.025
Soil: Exposure 0.0273 mg/kg, PNEC 0.63 mg/kg, RCR 0.0433
Marine water: Exposure 0.0016 mg/l, PNEC 0.79 mg/l, RCR 0.00203

Professional use of Ethanol as fuel source

3. Exposure estimation (Health 1)

Assessment method ECETOC TRA v2.0 Worker

Exposure Worker - inhalation: Exposure 9.6 mg/m³, DNEL 950 mg/m³, RCR 0.0101
Worker - dermal: Exposure 0.3 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.000875
Worker - all relevant routes: Exposure 1.7 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.00496
Worst case assumption



Exposure scenario

Professional use of Ethanol in non-spray applications

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Professional use of Ethanol in non-spray applications Dipping, immersion and pouring Treatment by dipping and pouring Roller, spreader, flow application
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
<u>Worker</u>	
Process category	PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation PROC19 Manual activities involving hand contact

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Annual amount for wide dispersive uses: 10000 tonnes

Professional use of Ethanol in non-spray applications

Frequency and duration of use

Continuous.
Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.
Technical measures No specific measures identified.
STP type Municipal STP.
STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.
Disposal method Contain and dispose of waste according to local regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure 5.73 kPa @ 20°C
Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation Palm of both hands. Covers skin contact area up to 480 cm².
PROC10 Roller application or brushing Both hands. Covers skin contact area up to 960 cm².
PROC19 Manual activities involving hand contact Hands and forearms. Covers skin contact area up to 1980 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.
Temperature Assumes activities are at ambient temperature (unless stated differently).
Ventilation rate Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. , or: Ensure operation is undertaken outdoors.

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

Technical protective measures No specific risk management measure identified beyond those operational conditions stated.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.
PROC19 Manual activities involving hand contact Limit the substance content in the product to 25%. , or: Avoid carrying out operation for more than 4 hours.

Professional use of Ethanol in non-spray applications

Risk management measures

PROC19 Manual activities involving hand contact
Limit the substance content in the product to 25%.
, or:
Wear suitable gloves (tested to EN374) and eye protection.

3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.34 mg/l, PNEC 580 mg/l, RCR 0.000586 Fresh water: Exposure 0.045 mg/l, PNEC 0.96 mg/l, RCR 0.0521 Soil: Exposure 0.0003 mg/kg, PNEC 0.63 mg/kg, RCR 0.000476 Marine water: Exposure 0.0044 mg/l, PNEC 0.79 mg/l, RCR 0.00557

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation: Exposure 115.25 mg/m ³ , DNEL 950 mg/m ³ , RCR 0.121 Worker - dermal: Exposure 84.86 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.247 Worker - all relevant routes: Exposure 101.32 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.295 Worst case assumption



Exposure scenario

Professional use of Ethanol in spray applications

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Professional use of Ethanol in spray applications Spraying
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
<u>Worker</u>	
Process category	PROC11 Non industrial spraying

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 25 %.

Amounts used

Annual amount for wide dispersive uses: 10000 tonnes

Frequency and duration of use

Continuous.
Emission days: 365 days/year

Professional use of Ethanol in spray applications

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Avoid discharge into drains and the aquatic environment.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 25 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at ambient temperature (unless stated differently).

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

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.
Avoid carrying out operation for more than 4 hours. , or: Limit the substance content in the product to 5%.

Risk management measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
Use suitable eye protection.
Wear a respirator conforming to EN140 with Type A filter or better.
, or:
Provide enhanced general ventilation by mechanical means.
, or:
Limit the substance content in the product to 25%.

Professional use of Ethanol in spray applications

3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.34 mg/l, PNEC 580 mg/l, RCR 0.000690 Fresh water: Exposure 0.045 mg/l, PNEC 0.96 mg/l, RCR 0.0469 Soil: Exposure 0.0003 mg/kg, PNEC 0.63 mg/kg, RCR 0.000476 Marine water: Exposure 0.0044 mg/l, PNEC 0.79 mg/l, RCR 0.00557

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation: Exposure 672.29 mg/m ³ , DNEL 950 mg/m ³ , RCR 0.708 Worker - dermal: Exposure 21.43 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.0625 Worker - all relevant routes: Exposure 117.47 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.342 Worst case assumption



Exposure scenario

Consumer use of Ethanol as automotive fuel

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer use of Ethanol as automotive fuel
Process scope	Covers consumer uses of automotive fuels only.
Product category	PC13 Fuels.
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 3800000 tonnes

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m ³ /day
Other factors	Covers use at ambient temperatures.

Risk management measures

Consumer use of Ethanol as automotive fuel

Good practice	Carefully pour from containers.
Technical measures	Do not discharge into drains or watercourses or onto the ground.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	This substance is consumed during use and no waste of the substance is generated.
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2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Amount per use: 100 litre

Frequency and duration of use

Covers frequency up to 1 day/week, , .
Application duration: <5 minutes

Other given operational conditions affecting Non-industrial exposure

Setting	Outdoor.
Temperature	Covers use at ambient temperatures.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.065 mg/l, PNEC 580 mg/l, RCR 0.000112 Fresh water: Exposure 0.0240 mg/l, PNEC 0.96 mg/l, RCR 0.025 Soil: Exposure 0.0273 mg/kg, PNEC 0.63 mg/kg, RCR 0.0433 Marine water: Exposure 0.0034 mg/l, PNEC 0.79 mg/l, RCR 0.00430

3. Exposure estimation (Health 1)

Assessment method	ConsExpo v4.1
Exposure	Consumer - dermal: Exposure 35.00 mg/kg/day, DNEL 206 mg/kg/day, RCR 0.170 Consumer - inhalation: Exposure 1.54 mg/m³, DNEL 144 mg/m³, RCR 0.0107 Worst case assumption



Exposure scenario

Consumer use of Ethanol as domestic fuel

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer use of Ethanol as domestic fuel
Process scope	Covers consumer uses in liquid fuels.
Product category	PC13 Fuels.
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 10000 tonnes

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m ³ /day
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Consumer use of Ethanol as domestic fuel

Other factors Covers use at ambient temperatures.

Risk management measures

Good practice Carefully pour from containers.

Technical measures Do not discharge into drains or watercourses or onto the ground.

Conditions and measures related to external treatment of waste for disposal

Waste treatment This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 100 %.

Amounts used

Amount per use: 1 litre

Frequency and duration of use

Covers frequency up to 1 day/week, , .

Application duration: <5 minutes

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 210 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor/outdoor use.

Temperature Covers use at ambient temperatures.

Other given operational conditions affecting Non-industrial exposure

Consumer information Avoid splashing. If risk of splashing, wear safety goggles or face shield.

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Assessment method ECETOC TRA v2.0 Environment

Environmental exposure STP: Exposure 0.340 mg/l, PNEC 580 mg/l, RCR 0.000690
Fresh water: Exposure 0.0447 mg/l, PNEC 0.96 mg/l, RCR 0.0466
Soil: Exposure 0.0003 mg/kg, PNEC 0.63 mg/kg, RCR 0.000476
Marine water: Exposure 0.0044 mg/l, PNEC 0.79 mg/l, RCR 0.00557

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

Exposure Consumer - dermal: Exposure 70.00 mg/kg/day, DNEL 206 mg/kg/day, RCR 0.340
Consumer - inhalation: Exposure 0.81 mg/m³, DNEL 144 mg/m³, RCR 0.000563
Worst case assumption



Exposure scenario

Use of Ethanol in consumer products (<50g per event)

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use of Ethanol in consumer products (<50g per event)
Process scope	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.
Product category	PC1 Adhesives, sealants. PC3 Air care products. PC8 Biocidal products PC12 Lawn and garden preparations (- fertilizers). PC14 Metal surface treatment products PC15 Non-metal-surface treatment products. PC18 Ink and toners. PC23 Leather treatment products PC24 Lubricants, greases and release products. PC27 Plant protection products. PC28 Perfumes, fragrances. PC30 Photochemicals. PC31 Polishes and wax blends. PC34 Textile dyes and impregnating products PC39 Cosmetics, personal care.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

Use of Ethanol in consumer products (<50g per event)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state Liquid

Amounts used

Annual amount for wide dispersive uses: 10000 tonnes

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving surface water flow: 18000 m³/day

Other factors Covers use at ambient temperatures.

Risk management measures

Good practice Carefully pour from containers.

Technical measures Do not discharge into drains or watercourses or onto the ground.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency fraction (offsite; STP): 90%

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state Liquid

Concentration details PC24 Lubricants, greases and release products. PC31 Polishes and wax blends.
Concentration of substance in product: <1%
PC5 Artists supply and hobby preparations. PC10 Building and construction preparations not covered elsewhere. PC22 Lawn and garden preparations, including fertilizers. PC23 Leather treatment products PC27 Plant protection products. PC30 Photochemicals. PC34 Textile dyes and impregnating products Concentration of substance in product: 1 - 5%
PC1 Adhesives, sealants. PC8 Biocidal products PC14 Metal surface treatment products PC15 Non-metal-surface treatment products. PC18 Ink and toners. Concentration of substance in product: 5 - 25%
PC3 Air care products. PC28 Perfumes, fragrances. Concentration of substance in product: >25%

Amounts used

Amount per use: <50 g

Frequency and duration of use

Covers daily exposure up to 4hours

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 210 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor/outdoor use.

Temperature Covers use at ambient temperatures.

Use of Ethanol in consumer products (<50g per event)

Room size Use in room with a minimum volume of 20 m³.

Other given operational conditions affecting Non-industrial exposure

Consumer information Avoid inhalation of vapours and contact with skin and eyes.

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Assessment method ECETOC TRA v2.0 Environment

Environmental exposure STP: Exposure 0.340 mg/l, PNEC 580 mg/l, RCR 0.000690
Fresh water: Exposure 0.0447 mg/l, PNEC 0.96 mg/l, RCR 0.0466
Soil: Exposure 0.0003 mg/kg, PNEC 0.63 mg/kg, RCR 0.000476
Marine water: Exposure 0.0044 mg/l, PNEC 0.79 mg/l, RCR 0.00557

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

Exposure Consumer - dermal: Exposure 2.87 mg/kg/day, DNEL 206 mg/kg/day, RCR 0.0139
Consumer - inhalation: Exposure 10.31 mg/m³, DNEL 144 mg/m³, RCR 0.0716
Worst case assumption



Exposure scenario

Consumer use of Ethanol in enclosed systems

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer use of Ethanol in enclosed systems
Process scope	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.
Product category	PC16 Heat transfer fluids.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 10000 tonnes

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m ³ /day
Other factors	Covers use at ambient temperatures.

Risk management measures

Consumer use of Ethanol in enclosed systems

Good practice	Carefully pour from containers.
Technical measures	Handle product within a closed system. Do not discharge into drains or watercourses or onto the ground.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

Conditions and measures related to external treatment of waste for disposal

Not applicable as there is no release to wastewater.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Amount per use: <50 g

Frequency and duration of use

Covers frequency up to 1 - 5 days/year, , .

Other given operational conditions affecting Non-industrial exposure

Temperature	Covers use at ambient temperatures. Handle substance within a closed system.
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Other given operational conditions affecting Non-industrial exposure

Consumer information	Avoid inhalation of vapours and contact with skin and eyes. Keep container tightly closed. No specific risk management measure identified beyond those operational conditions stated.
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3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.017 mg/l, PNEC 580 mg/l, RCR 0.0000293 Fresh water: Exposure 0.0155 mg/l, PNEC 0.96 mg/l, RCR 0.0161 Soil: Exposure 0.00013 mg/kg, PNEC 0.63 mg/kg, RCR 0.000206 Marine water: Exposure 0.00145 mg/l, PNEC 0.79 mg/l, RCR 0.00184

3. Exposure estimation (Health 1)

Assessment method	ConsExpo v4.1
Exposure	Consumer - dermal: Exposure 0.85 mg/kg/day, DNEL 206 mg/kg/day, RCR 0.00413 Consumer - inhalation: Exposure 0.04 mg/m ³ , DNEL 144 mg/m ³ , RCR 0.000278 Worst case assumption



Exposure scenario

Consumer use of Ethanol in coatings and paints

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer use of Ethanol in coatings and paints
Product category	PC9a Coatings and paints, thinners, paint removers. PC9c Finger paints.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 10000 tonnes

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m ³ /day
Other factors	Covers use at ambient temperatures.

Consumer use of Ethanol in coatings and paints

Risk management measures

Technical measures	No specific risk management measure identified beyond those operational conditions stated.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day Removal efficiency (total): 90%

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 15 %.

Amounts used

Amount per use: 50 - 250 g

Frequency and duration of use

Covers frequency up to 1 - 5 days/year, , .
Application duration: 20 - 60 minutes

Human factors not influenced by risk management

Potentially exposed body parts	Palm of one hand. Covers skin contact area up to 428 cm ² .
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Other given operational conditions affecting Non-industrial exposure

Setting	Indoor/outdoor use.
Temperature	Covers use at ambient temperatures.
Room size	Use in room with a minimum volume of 20 m ³ .
Ventilation rate	Open windows during application to ensure natural ventilation.

3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.340 mg/l, PNEC 580 mg/l, RCR 0.000586 Fresh water: Exposure 0.0447 mg/l, PNEC 0.96 mg/l, RCR 0.0466 Soil: Exposure 0.0003 mg/kg, PNEC 0.63 mg/kg, RCR 0.000476 Marine water: Exposure 0.0044 mg/l, PNEC 0.79 mg/l, RCR 0.00557

3. Exposure estimation (Health 1)

Assessment method	ConsExpo v4.1
Exposure	Consumer - dermal, short-term - local and systemic: Exposure 21.44 mg/kg/day, DNEL 206 mg/kg/day, RCR 0.104 Consumer - dermal, long-term - systemic: Exposure 0.30 mg/m ³ , DNEL 206 mg/m ³ , RCR 0.00146 Consumer - inhalation, short-term - local and systemic: Exposure 375 mg/m ³ , DNEL 950 mg/m ³ , RCR 0.395 Consumer - inhalation, long-term - systemic: Exposure 0.50 mg/m ³ , DNEL 144 mg/m ³ , RCR 0.00347 Worst case assumption



Exposure scenario

Consumer use of Ethanol in antifreeze, deicing and screenwash products

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer use of Ethanol in antifreeze, deicing and screenwash products De-icing and anti-icing applications
Product category	PC4 Anti-freeze and de-icing products.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 125000 tonnes

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m ³ /day
Other factors	Covers use at ambient temperatures.

Risk management measures

Consumer use of Ethanol in antifreeze, deicing and screenwash products

Technical measures	No specific risk management measure identified beyond those operational conditions stated.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day Removal efficiency (total): 90%

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Amount per use: 1 - 50 g

Frequency and duration of use

Covers weekly exposure up to 5minutes

Human factors not influenced by risk management

Potentially exposed body parts	Covers skin contact area up to 214 cm ² .
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Other given operational conditions affecting Non-industrial exposure

Setting	Indoor/outdoor use.
Temperature	Covers use at ambient temperatures.

Other given operational conditions affecting Non-industrial exposure

Consumer information	If risk of splashing, wear safety goggles or face shield.
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3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.0011 mg/l, PNEC 580 mg/l, RCR 0.00000190 Fresh water: Exposure 0.014 mg/l, PNEC 0.96 mg/l, RCR 0.0146 Soil: Exposure 0.00013 mg/kg, PNEC 0.63 mg/kg, RCR 0.000206 Marine water: Exposure 0.0013 mg/l, PNEC 0.79 mg/l, RCR 0.00165

3. Exposure estimation (Health 1)

Assessment method	ConsExpo v4.1
Exposure	Consumer - dermal: Exposure 17.87 mg/kg/day, DNEL 206 mg/kg/day, RCR 0.0867 Consumer - inhalation: Exposure 0.51 mg/m ³ , DNEL 144 mg/m ³ , RCR 0.00354 Worst case assumption



Exposure scenario

Consumer use of Ethanol in washing and cleaning products

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer use of Ethanol in washing and cleaning products
Product category	PC35 Washing and cleaning products
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 40000 tonnes

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m ³ /day
Other factors	Covers use at ambient temperatures.

Consumer use of Ethanol in washing and cleaning products

Risk management measures

Technical measures	No specific risk management measure identified beyond those operational conditions stated.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day Removal efficiency (total): 90%

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 25 %.

Amounts used

Amount per use: <250 g

Frequency and duration of use

Covers daily exposure up to 60minutes

Other given operational conditions affecting Non-industrial exposure

Setting	Indoor/outdoor use.
Temperature	Covers use at ambient temperatures.
Ventilation rate	Covers use under typical household ventilation. Spraying Open windows during application to ensure natural ventilation.

3. Exposure estimation (Environment 1)

Assessment method	ECETOC TRA v2.0 Environment
Environmental exposure	STP: Exposure 0.681 mg/l, PNEC 580 mg/l, RCR 0.00117 Fresh water: Exposure 0.0818 mg/l, PNEC 0.96 mg/l, RCR 0.0852 Soil: Exposure 0.000451 mg/kg, PNEC 0.63 mg/kg, RCR 0.000716 Marine water: Exposure 0.00808 mg/l, PNEC 0.79 mg/l, RCR 0.0102

3. Exposure estimation (Health 1)

Assessment method	ConsExpo v4.1
Exposure	Consumer - dermal: Exposure 10.7 mg/kg/day, DNEL 206 mg/kg/day, RCR 0.0519 Consumer - inhalation: Exposure 1.73 mg/m ³ , DNEL 144 mg/m ³ , RCR 0.0120 Worst case assumption



Exposure scenario

Industrial and Professional use of Ethanol as a laboratory agent

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial and Professional use of Ethanol as a laboratory agent
Process scope	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.
Main sector	SU3 Industrial uses SU22 Professional uses

Environment

Environmental release category	ERC2 Formulation into mixture ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
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Worker

Process category	PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Regional use tonnage: 500 tonnes/year
Annual amount used in the EU: 5000 tonnes

Industrial and Professional use of Ethanol as a laboratory agent

Frequency and duration of use

Continuous.
Emission days: 300 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposure up to 4hours

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes activities are at ambient temperature (unless stated differently).

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

Technical protective measures No specific risk management measure identified beyond those operational conditions stated.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

If risk of splashing, wear safety goggles or face shield.

3. Exposure estimation (Environment 1)

Assessment method ECETOC TRA v2.0 Environment

Industrial and Professional use of Ethanol as a laboratory agent

Environmental exposure	STP: Exposure 0.170 mg/l, PNEC 580 mg/l, RCR 0.000293
	Fresh water: Exposure 0.027 mg/l, PNEC 0.96 mg/l, RCR 0.0281
	Soil: Exposure 0.0002 mg/kg, PNEC 0.63 mg/kg, RCR 0.000317
	Marine water: Exposure 0.0027 mg/l, PNEC 0.79 mg/l, RCR 0.00342

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation: Exposure 19.21 mg/m ³ , DNEL 950 mg/m ³ , RCR 0.0202
	Worker - dermal: Exposure 0.34 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.000991
	Worker - all relevant routes: Exposure 3.09 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.00901
	Worst case assumption



Exposure scenario

Industrial and Professional use of Ethanol as heat transfer fluid, or other functional fluid

Identification

Product name	Ethanol
REACH registration number	01-2119457610-43-XXXX
CAS number	64-17-5
EC number	200-578-6
EU index number	603-002-00-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial and Professional use of Ethanol as heat transfer fluid, or other functional fluid
Process scope	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.
Main sector	SU3 Industrial uses SU22 Professional uses

Environment

Environmental release category	ERC7 Use of functional fluid at industrial site ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
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Worker

Process category	PROC20 Use of functional fluids in small devices
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Regional use tonnage: 500 tonnes/year
Annual amount used in the EU: 5000 tonnes

Frequency and duration of use

Not applicable.

Industrial and Professional use of Ethanol as heat transfer fluid, or other functional fluid

Environmental factors not influenced by risk management measures

Dilution Receiving water dilution (fresh or marine): 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures When not in use, keep containers tightly closed. Avoid discharge into drains and the aquatic environment. Handle substance within a closed system.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Removal efficiency (total): 90%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sludge is disposed of or recovered.

Disposal method Contain and dispose of waste according to local regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure 5.73 kPa @ 20°C

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposure up to 4hours

Human factors not influenced by risk management

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at ambient temperature (unless stated differently).

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

Technical protective measures Handle substance within a closed system. Store substance within a closed system.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

If risk of splashing, wear safety goggles or face shield.

3. Exposure estimation (Environment 1)

Assessment method ECETOC TRA v2.0 Environment

Environmental exposure STP: Exposure 0 mg/l, PNEC 580 mg/l, RCR 0
Fresh water: Exposure 0.0107 mg/l, PNEC 0.96 mg/l, RCR 0.0111
Soil: Exposure 0.0002 mg/kg, PNEC 0.63 mg/kg, RCR 0.000317
Marine water: Exposure 0.0010 mg/l, PNEC 0.79 mg/l, RCR 0.00127

3. Exposure estimation (Health 1)

Industrial and Professional use of Ethanol as heat transfer fluid, or other functional fluid

Assessment method ECETOC TRA v2.0 Worker

Exposure

Worker - inhalation: Exposure 38.42 mg/m³, DNEL 950 mg/m³, RCR 0.0404

Worker - dermal: Exposure 1.71 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.00499

Worker - all relevant routes: Exposure 7.20 mg/kg/day, DNEL 343 mg/kg/day, RCR 0.0210

Worst case assumption



Exposure scenario

Use as a fuel in industrial settings

Identification

Product name	Methanol
REACH registration number	01-2119433307-44-XXXX
CAS number	67-56-1
EC number	200-659-6
EU index number	603-001-00-X
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use as a fuel in industrial settings
Process scope	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
<u>Worker</u>	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels PROC19 Manual activities involving hand contact

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Use as a fuel in industrial settings

No exposure assessment presented for the environment.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	169.27 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC16 Use of fuels Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm². PROC19 Manual activities involving hand contact Hands and forearms. Covers skin contact area up to 1980 cm².
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Other given operational conditions affecting workers exposure

Setting	Indoor.
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Technical conditions and measures at process level (source) to prevent release

Technical protective measures	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Local exhaust ventilation - efficiency of at least [%]: 90 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Local exhaust ventilation - efficiency of at least [%]: 97
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Risk management measures

PROC19 Manual activities involving hand contact
Wear suitable gloves tested to EN374.

3. Exposure estimation (Health 1)

Assessment method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
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4. Guidance to check compliance with the exposure scenario (Health 1)

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.



Exposure scenario

Use as a fuel in professional settings

Identification

Product name	Methanol
REACH registration number	01-2119433307-44-XXXX
CAS number	67-56-1
EC number	200-659-6
EU index number	603-001-00-X
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use as a fuel in professional settings
Process scope	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor) ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)
<u>Worker</u>	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels PROC19 Manual activities involving hand contact

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Use as a fuel in professional settings

No exposure assessment presented for the environment.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	169.27 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC16 Use of fuels Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm². PROC19 Manual activities involving hand contact Hands and forearms. Covers skin contact area up to 1980 cm².
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Other given operational conditions affecting workers exposure

Setting	Indoor.
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Technical conditions and measures at process level (source) to prevent release

Technical protective measures	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Local exhaust ventilation - efficiency of at least [%]: 80
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Risk management measures

PROC19 Manual activities involving hand contact
Wear suitable gloves tested to EN374.

3. Exposure estimation (Health 1)

Assessment method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
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4. Guidance to check compliance with the exposure scenario (Health 1)

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.



Exposure scenario

Professional use in oilfield drilling and production operations

Identification

Product name	Methanol
REACH registration number	01-2119433307-44-XXXX
CAS number	67-56-1
EC number	200-659-6
EU index number	603-001-00-X
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Professional use in oilfield drilling and production operations
Process scope	Oil field well drilling and production operations (including drilling muds and well cleaning), including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC9b Widespread use of functional fluid (outdoor)
<u>Worker</u>	
Process category	PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

No exposure assessment presented for the environment.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
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Professional use in oilfield drilling and production operations

Vapour pressure 169.27 hPa @ 25°C

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

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

Human factors not influenced by risk management

Potentially exposed body parts PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

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

Technical protective measures PROC4 Chemical production where opportunity for exposure arises Local exhaust ventilation - efficiency of at least [%]: 80

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

4. Guidance to check compliance with the exposure scenario (Health 1)

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.



Exposure scenario

Consumer use of fuels indoors

Identification

Product name	Methanol
REACH registration number	01-2119433307-44-XXXX
CAS number	67-56-1
EC number	200-659-6
EU index number	603-001-00-X
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer use of fuels indoors
Product category	PC13 Fuels.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

No exposure assessment presented for the environment.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	169 hPa @ 25°C
Concentration details	Concentration of substance in product: 80%

Amounts used

Amount per use: 16.2 g

Frequency and duration of use

Consumer use of fuels indoors

Covers frequency up to 2 days/week, , .
Covers exposure up to 10 minutes per event.
Application duration: 10 minutes

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.
Room size 20 m³
Release area: 2 cm²

Other given operational conditions affecting Non-industrial exposure

Consumer information Avoid using without gloves. When not in use, keep containers tightly closed.

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

4. Guidance to check compliance with the exposure scenario (Health 1)

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.



Exposure scenario

Consumer use of fuels outdoors

Identification

Product name	Methanol
REACH registration number	01-2119433307-44-XXXX
CAS number	67-56-1
EC number	200-659-6
EU index number	603-001-00-X
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer use of fuels outdoors
Product category	PC13 Fuels.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

No exposure assessment presented for the environment.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	169 hPa @ 25°C
Concentration details	Concentration of substance in product: 100%

Frequency and duration of use

Covers frequency up to 240 days/week, days/year, , .
Covers exposure up to 15 minutes per event.

Human factors not influenced by risk management

Consumer use of fuels outdoors

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Outdoor.

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

4. Guidance to check compliance with the exposure scenario (Health 1)

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.