

SAFETY DATA SHEET

NITAL 3%

According to Regulation (EC) No 1907/2006, Annex II

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

1.1. Product identifier

Product name NITAL 3%

Product number 2420

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

Identified uses Laboratory chemicals

Uses advised against Processes that would lead to over-exposure of the operators. Processes involving sources of ignition.

1.3. Details of the supplier of the safety data sheet

Supplier

Reagent Chemical Services
 18 Aston Fields Road
 Whitehouse Industrial Estate
 Runcorn
 Cheshire WA7 3DL

T: 01928 716903 (08.30 - 17.00)

F: 01928 716425

E: info@reagent.co.uk

1.4. Emergency telephone number

Emergency telephone OHES Environmental Ltd 24-7
 Tel. 0333 333 9939 (24 hour)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Flam. Liq. 2 - H225 Met. Corr. 1 - H290

Health hazards Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 STOT SE 2 - H371

Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) Xn;R20/21/22,R68/20/21/22. F;R11.

Human health Harmful by inhalation, in contact with skin and if swallowed. Inhalation of vapours or spray mists may irritate the throat and respiratory system. The product contains methanol which may cause damage to internal organs.

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Environmental

The product is not classed as environmentally hazardous. The product is miscible with water and will spread in water systems. Due to the flammability of the product there is a high potential to cause fire especially if discharged near to ignition sources. This can lead to widespread fire and environmental damage.

Physicochemical

The product is highly flammable. Vapours may form explosive mixtures with air. Can react violently or explosively with oxidising agents and acids. The flow or agitation of the substance can generate electrostatic charges, which can produce an explosion. Ensure sufficient earthing systems are in place to eliminate electrostatic build up.

2.2. Label elements

Pictogram



Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.
H290 May be corrosive to metals.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H371 May cause damage to organs .

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe vapour/ spray.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

METHANOL, NITRIC ACID ...%

NITAL 3%**Supplementary precautionary statements**

P233 Keep container tightly closed.
 P234 Keep only in original container.
 P240 Ground/ bond container and receiving equipment.
 P241 Use explosion-proof electrical equipment.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P261 Avoid breathing vapour/ spray.
 P264 Wash contaminated skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor.
 P310 Immediately call a POISON CENTER/ doctor.
 P312 Call a POISON CENTER/ doctor if you feel unwell.
 P321 Specific treatment (see medical advice on this label).
 P332+P313 If skin irritation occurs: Get medical advice/ attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.
 P390 Absorb spillage to prevent material damage.
 P403+P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P406 Store in corrosive resistant container with a resistant inner liner.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

ETHANOL		60-100%
CAS number: 64-17-5	EC number: 200-578-6	REACH registration number: 01-2119457610-43-0000
Classification	Classification (67/548/EEC or 1999/45/EC)	
Flam. Liq. 2 - H225 Eye Irrit. 2 - H319	F;R11	
METHANOL		1-5%
CAS number: 67-56-1	EC number: 200-659-6	REACH registration number: 01-2119433307-44-XXXX
Classification	Classification (67/548/EEC or 1999/45/EC)	
Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 STOT SE 1 - H370	F;R11 T;R23/24/25,R39/23/24/25	

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NITRIC ACID ...%		1-5%
CAS number: 7697-37-2	EC number: 231-714-2	REACH registration number: 01-2119487297-23-0000
Classification	Classification (67/548/EEC or 1999/45/EC)	
Ox. Liq. 3 - H272	O;R8 C;R35	
Met. Corr. 1 - H290		
Skin Corr. 1A - H314		
Eye Dam. 1 - H318		

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures**4.1. Description of first aid measures**

General information	CAUTION! First aid personnel must be aware of own risk during rescue! Always consider any dangers in the vicinity before approaching to treat the casualty. First aid personnel must protect themselves with all necessary personal protective equipment during the assistance of casualties. Isolate all sources of ignition when treating casualties - DO NOT SMOKE. When breathing is difficult, properly trained personnel may assist the casualty by administering oxygen. Check airway for any blockages. Place unconscious person on the side in the recovery position and ensure breathing can take place. Never give anything by mouth to an unconscious person. If breathing has stopped perform CPR. If medical assistance is needed take as much detail as possible about the incident and hazardous materials involved with the casualty.
Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.
Ingestion	Do not induce vomiting. Rinse mouth thoroughly with water Get medical attention.
Skin contact	Remove contaminated clothing and wash before re - use. Rinse immediately with plenty of water. If irritation or discomfort occurs obtain medical attention
Eye contact	Promptly wash eyes with plenty of water or eye wash solution while lifting the eyelids.If possible remove any contact lenses and continue to wash. Get medical attention if any discomfort continues.

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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure. Can be absorbed through the skin. Due to the methanol content there is the possibility of damage to internal organs including the optic nerve.
Inhalation	Irritation of the respiratory system. Irritation of eyes, nose and throat. Coughing. Lacrimation of eyes.
Ingestion	Nausea, vomiting. May cause nausea, headache, dizziness and intoxication. Unconsciousness, possibly coma or death. Delayed: Hypoglycaemia.
Skin contact	Skin irritation. Delayed: Skin dryness and dermatitis.
Eye contact	Causes irritation of the eyes. Lachrymation. May cause redness and burns.

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

Notes for the doctor	Cases of ingestion should receive prompt medical attention. Have facilities in place to wash skin and eyes in case of exposure.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Small fires: Extinguish with alcohol-resistant foam, carbon dioxide or dry powder. Large fires: Dry powder, foam or water spray/mist.
Unsuitable extinguishing media	Do not use water jet as this can spread the fire. Do not use carbon dioxide in enclosed spaces with insufficient ventilation.

5.2. Special hazards arising from the substance or mixture

Specific hazards	In case of fire, toxic gases or vapours may be formed. 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. Sealed containers of the product or other flammable liquids in the near vicinity of the fire can explode due to pressure build up.
Hazardous combustion products	Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrous gases (NO _x).

5.3. Advice for firefighters

Protective actions during firefighting	Containers close to the fire area should be cooled with water if safe to do so. Be aware that any flammable substance containers are liable to explode when heated. Prevent run-off from entering drains and watercourses. Be aware of dangers from other hazardous substances in the immediate area.
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	Use protective clothing and equipment as described in section 8 of this datasheet. Isolate all sources of ignition. Provide adequate ventilation. Avoid ingestion, inhalation of vapours and contact with skin and eyes. Restrict access to the area until the spillage is treated, if large amounts of vapours are produced that will be hazardous to others, evacuate the area. Use suitable respiratory equipment if spillages occur in enclosed spaces and vapours are produced. Have emergency procedures in place for treating spillages, evacuating the area and informing the emergency services if necessary. When any other effects of spillages will affect the safety of others the area should be evacuated. Restrict access to the area until the spillage is treated and it is safe to return.
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6.2. Environmental precautions

Environmental precautions	Avoid unauthorised discharge to the environment. Do not discharge into drains or watercourses or onto the ground. Clean up any spillages immediately, prevent material from spreading and entering drains or sewage systems. If spillages to land cannot be treated safely or if contamination will occur the Environment Agency must be alerted immediately. Large spillages or uncontrolled discharge to water systems must be alerted to the Environmental Agency or other regulatory body. If the substance has entered a foul drain or sewage system in significant quantity to cause a hazard the local Water Treatment Company must be informed.
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6.3. Methods and material for containment and cleaning up

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Methods for cleaning up

Isolate all ignition sources. Avoid heat, flames, sparks and static discharge. NO SMOKING. Small Spillages: Absorb with inert, non-combustible material. Large Spillages: Dam and absorb spillages with sand, earth or other inert, non-combustible material. Fit drain covers where they are available if the spillage is likely to enter the drainage system. Provide adequate ventilation. Any extraction systems used to ventilate the area must be flameproof. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Ensure there are no ignition or heat sources in the waste storage area. Wash spillage site well with water and detergent, be aware of the potential for surfaces to become slippery. Wash thoroughly after dealing with a spillage. After spillages in enclosed areas test atmosphere before using any potential ignition sources. Ventilate area and allow to dry before allowing access.

6.4. Reference to other sections

Reference to other sections Refer to sections 8 and 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Static electricity and formation of sparks must be prevented. Eliminate all sources of ignition. Avoid spilling. Avoid contact with skin and eyes. Avoid inhalation of vapours and spray/mists. Do not mix with incompatible substances or mixtures. Do not eat, drink or smoke when handling. Do not dispose of the substance to the environment through unauthorised means. Do not discharge to land or water including the drainage system. Do not use in areas close to drainage systems unless measures are in place to prevent access of product. Do not use in confined spaces without adequate ventilation and/or respirator. Use flame proof fume extraction systems to remove vapours away from the work area. Wash at the end of each work shift and before using the toilet. Remove contaminated clothing/footwear/equipment before entering eating areas or other places that would expose others to the substance. Ensure emergency procedures are in place to treat spillages and cope with other situations such as evacuation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Keep away from oxidising materials, heat and flames. Avoid all ignition sources. Store in area with adequate ventilation and sufficient air movement to prevent any build up of vapours. Store in closed original container at temperatures between 15°C and 25°C. Store away from heat, direct sunlight and moisture. Store away from oxidising agents. Store away from incompatible materials. Keep above the chemical's freezing point. Store in a stable situation to avoid spillages. It is advisable to store in a bunded area or use other protective measures such as a sump pallet or storage tray. If the substance is transferred to other containers ensure the packaging material is compatible. Consult with the packaging manufacturer or supplier. Do not leave storage containers exposed to the atmosphere as this will result in evaporation of contents.

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

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METHANOL

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

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

NITRIC ACID ...%

Long-term exposure limit (8-hour TWA): WEL

Short-term exposure limit (15-minute): WEL 1 ppm 2.6 mg/m³

WEL = Workplace Exposure Limit

DNEL

Industry - Inhalation; Short term : 1900 (local) mg/m³

The DNEL's are taken from the ECHA website of registered substances and refer to the major component ethanol.

Industry - Dermal; Long term : 343 (systemic) mg/kg/day

Industry - Inhalation; Long term : 950 (systemic) mg/m³

Consumer - Inhalation; Short term : 950 (local) mg/m³

Consumer - Dermal; Long term : 206 (systemic) mg/kg/day

Consumer - Inhalation; Long term : 114 (systemic) mg/m³

Consumer - Oral; Long term : 87 (systemic) mg/kg/day

PNEC

- Fresh water; 0.96 mg/l

PNEC's are taken from the ECHA website of registered substances and refer to the major constituent ethanol.

- Marine water; 0.79 mg/l

- STP; 580 mg/l

- Sediment; 3.6 (freshwater) mg/kg

- Sediment; 2.9 (marine water) mg/kg

- Soil; 0.63 mg/kg

ETHANOL (CAS: 64-17-5)

DNEL

Workers - Inhalation; Long term systemic effects: 950 mg/m³

Workers - Dermal; Long term systemic effects: 343 mg/kg/day

General population - Inhalation; Long term systemic effects: 114 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

- STP; 580 mg/l

- Sediment; 3.6 (freshwater) mg/kg

- Sediment; 2.9 (marine water) mg/kg

- Soil; 0.63 mg/kg

METHANOL (CAS: 67-56-1)

Biological limit values

No information available from the supplier., No information available from the supplier., No information available from the supplier.

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DNEL	<p>Workers - Inhalation; Long term systemic effects: 260 mg/m³</p> <p>Workers - Inhalation; Short term systemic effects: 260 mg/m³</p> <p>Workers - Inhalation; Long term local effects: 260 mg/m³</p> <p>Workers - Inhalation; Short term local effects: 260 mg/m³</p> <p>Workers - Dermal; Long term systemic effects: 40 mg/kg/day</p> <p>Workers - Dermal; Short term systemic effects: 40 mg/kg/day</p> <p>General population - Inhalation; Long term systemic effects: 50 mg/m³</p> <p>General population - Inhalation; Short term systemic effects: 50 mg/m³</p> <p>General population - Inhalation; Long term local effects: 50 mg/m³</p> <p>General population - Inhalation; Short term local effects: 50 mg/m³</p> <p>General population - Dermal; Long term systemic effects: 8 mg/kg/day</p> <p>General population - Dermal; Short term systemic effects: 8 mg/kg/day</p> <p>General population - Oral; Long term systemic effects: 8 mg/kg/day</p> <p>General population - Oral; Short term systemic effects: 8 mg/kg/day</p>
PNEC	<ul style="list-style-type: none"> - Fresh water; 20.8 mg/l - Marine water; 2.08 mg/l - STP; 100 mg/l - Sediment (Freshwater); 77 mg/kg - Sediment (Marinewater); 7.7 mg/kg - Soil; 100 mg/kg

NITRIC ACID ...% (CAS: 7697-37-2)

DNEL	<p>Workers - Inhalation; Long term local effects: 2.6 mg/m³</p> <p>Workers - Inhalation; Short term local effects: 2.6 mg/m³</p> <p>General population - Inhalation; Long term local effects: 1.3 mg/m³</p> <p>General population - Inhalation; Short term local effects: 1.3 mg/m³</p>
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8.2. Exposure controls

Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Use explosion-proof general and local exhaust ventilation. If vapours or mists are generated, work in a fume cupboard.

Eye/face protection

Wear approved chemical safety goggles conforming to EN 166.

Hand protection

Wear protective gloves. Nitrile rubber. Butyl rubber. Polyvinyl chloride (PVC). Viton rubber (fluoro rubber). For gloves involving total immersion 1.0mm thickness (if available) are recommended, at least 0.5mm and breakthrough time of >480 minutes. For splash resistance use minimum 0.5mm thickness and breakthrough time > 240 minutes. Gloves should have a breakthrough time sufficient for the amount of handling but allow dexterity for safe movement and handling. 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. Gloves showing signs of degradation should be changed to avoid skin contamination. It should be noted that liquid may penetrate the gloves. Frequent changes are recommended. Gloves should carry the CE mark and conform to BS EN 374, chemicals and micro-organisms. When removing used gloves apply proper technique by avoiding skin contact with the outer surface.

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Other skin and body protection	Wear suitable protective clothing during transport, handling and storage operations connected with the product. Protective clothing should conform to the general requirements of EN 340:2003. Also consider EN 13034:2005; EN 14605:2005; EN 943:2002 dependent upon the situation resulting in exposure. Wear suitable protective footwear during handling of the product. When treating spillages it is recommended to wear protective boots, consult with the supplier as to the compatibility. Safety footwear should conform to standards EN 344 - 347. Wear plastic apron and full length gloves if handling large amounts. If there is a risk of splashing then wear a face shield. Have facilities in place to wash eyes in case of contact. If handling large amounts it is recommended to have a safety shower. Wear anti-static footwear.
Hygiene measures	Remove clothing when contamination will result in exposure to the substance, segregate and wash before re-use. Do not eat, drink or smoke in the work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Remove contaminated clothing when entering eating areas or other places that could lead to contamination of others with the product.
Respiratory protection	Wear suitable respiratory protection when vapours or mists are produced if the Workplace Exposure Limit is exceeded and there is insufficient ventilation or extraction. Wear a respirator fitted with the following cartridge: Organic vapour filter. CAUTION: Air purifying respirators do not protect the user in oxygen deficient atmospheres, use air supplied system. Consult with the supplier as to the compatibility of the equipment with the chemical of concern. Respiratory protection should conform to the following standards. BS EN 140: Half-face masks. BS EN 136: Full face masks. Powered air respirators should meet requirements of EN146 and EN12941. Airline fed respirators should meet the requirements of EN 270 and EN1835. Respiratory protection should be maintained in a proper condition and inspected at the frequency specified by current legislation.
Environmental exposure controls	See section 6 for details.

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. No information available.
pH	pH (concentrated solution): No information available. No information available.
Melting point	-114°C
Initial boiling point and range	Approx. 78°C @ 760 mm Hg
Flash point	13°C
Evaporation rate	No information available.
Evaporation factor	No information available.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 3.5 Upper flammable/explosive limit: 19 Taken from a safety data sheet. Taken from a safety data sheet.
Vapour pressure	5.81 kPa @ °C
Vapour density	No information available. «59» «184»
Relative density	0.79 @ °C Temperature quoted as 20°C
Solubility(ies)	78.9 @ °C Miscible with water. pH 7 @ 20°C

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Partition coefficient	: log Pow = -0.35 @ 24°C, pH 7. OECD Guideline 107. OECD Test Guideline 107.
Auto-ignition temperature	363 - 425°C
Decomposition Temperature	No information available.
Viscosity	1.26 mPa s @ 20°C
Explosive properties	Not explosive in its normal state. The substance is not classed as explosive but can form explosive vapour / air mixtures. Can react explosively with oxidising agents and acids, especially nitric acid.
Oxidising properties	Does not meet the criteria for classification as oxidising.
Comments	This information refers to the main constituent, ethanol.

9.2. Other information

Other information All available information has been included in section 9.1.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Can react with strong acids and oxidising agents. Aluminium at higher temperatures. Can react with a variety of other organic compounds to produce other substances with health and physical hazards such as flammable, irritant or toxic properties.

10.2. Chemical stability

Stability Stable when stored in sealed container at normal temperatures and in a suitable location. Evaporation will occur if the containers are not sealed correctly. Agitation of the substance in storage containers may produce a build up of electrostatic charge. Forms explosive mixtures with air.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions May react violently or explosively on contact with oxidising agents in the presence of acids. Pressure may build up if reaction occurs in a sealed container. Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid Avoid sources of heat and ignition. Avoid direct sunlight and moisture. Avoid storage with incompatible materials. Avoid storage in freezing conditions. Avoid storage near to unprotected drainage systems. It is advisable to store the product within some form of containment to prevent spillages reaching drainage systems. Situations that would produce vibration or agitation of the substance in storage containers as there is the potential to build up static charge, particularly in metal or compatible plastic containers. Do not allow the storage container to be left exposed to the atmosphere. Avoid storage in an unstable manner or in a situation that would result in exposure to the product.

10.5. Incompatible materials

Materials to avoid Oxidising agents. Concentrated nitric and sulphuric acid. Acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. See section 5 for thermal decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects The following information refers to the major constituent ethanol.

NITAL 3%**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg) 9,920.0

Species Rat

Notes (oral LD₅₀) Calculated figure for pure ethanol based on result of 12,400 mg/kg for 80% aqueous solution. OECD Guideline 401, Acute Oral Toxicity.

ATE oral (mg/kg) 2,631.58

Acute toxicity - dermal

Notes (dermal LD₅₀) No information available. Information not reliable.

ATE dermal (mg/kg) 7,894.74

Acute toxicity - inhalation

Species Rat

Notes (inhalation LC₅₀) OECD Guideline 403 (Acute inhalation toxicity).

ATE inhalation (gases ppm) 18,421.05

ATE inhalation (vapours mg/l) 78.95

ATE inhalation (dusts/mists mg/l) 13.16

Skin corrosion/irritation

Animal data Dose: 0.2ml, 7 day, Rabbit Primary dermal irritation index: 0 Erythema/eschar score: No erythema (0). Oedema score: No oedema (0). OECD Guideline 404 Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation Irritating Tests on rabbits, OECD Guideline 405, Acute eye Irritation / Corrosion.

Respiratory sensitisation

Respiratory sensitisation No reliable information. There is no evidence that the material can lead to respiratory hypersensitivity.

Skin sensitisation

Skin sensitisation - Mouse: Industry - Dermal; Long term systemic effects 22 mg/kg/day Not sensitising. OECD Guideline 429 (Skin Sensitisation Local Lymph Node Assay).

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation:: Negative., With and without metabolic activation. OECD 471, Salmonella typhimurium.

Genotoxicity - in vivo Chromosome aberration: Negative. OECD Guideline 478, Genetic toxicity: Rodent Dominant Lethal Test. Tests on rats.

Carcinogenicity

Carcinogenicity No information available. No reliable information.

Reproductive toxicity

Reproductive toxicity - fertility Two-generation study - NOAEL 20.7 g/kg/day , Oral, Mouse P OECD Guideline 415. Ethanol up to 15% in drinking water had no demonstrable effect on fertility.

Reproductive toxicity - development Developmental toxicity: - NOAEL: 5200 mg/kg, Oral, Rat No significant effects on fetal growth or ossification observed in the fetuses of dams fed at 5.2 g/kg bw/day.

Specific target organ toxicity - single exposure

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STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure LOAEL 4 ml/kg of 100% ethanol Industry - Dermal; Long term systemic effects 22 mg/kg/day, Oral, Rat OECD Guideline 408. Increase in organ weight.

Target organs Kidneys Liver

General information

Effects will be dependent upon the concentration and length of time of exposure. Higher concentrations will produce more pronounced effects. Exposure via ingestion: Fatal dose = 3 g/kg in children and 5 g/kg in adults. Exposure via inhalation: 1000-5000 ppm produces symptoms of irritation; 5000 ppm, uncomfortable to breathe; 5000-10000 ppm, irritation of the eyes and coughing; 15,000 ppm, lachrimation and coughing; >20,000 ppm, intolerable.

Inhalation

Irritation of the respiratory system. Causes coughing. Vapours may cause drowsiness and dizziness.

Ingestion

May cause nausea, headache, dizziness and intoxication. Vomiting Unconsciousness, coma and possibly death.

Skin contact

May cause skin irritation. May be absorbed through the skin. Product has a defatting effect on skin. May cause secondary inflammation.

Eye contact

Irritating to eyes.

Acute and chronic health hazards

Absorption of large quantities may cause irreversible damage to the optic nerve (due to methanol),nausea,headache,vomiting,inebriation and blindness. Causes narcosis and possible respiratory paralysis.

Target organs

Brain Kidneys Liver

SECTION 12: Ecological Information**Ecotoxicity**

Although not classified as environmentally hazardous, harmful effects cannot be excluded in the event of improper handling or disposal. The information in section 12 refers to the major component ethanol.

12.1. Toxicity**Acute toxicity - fish**

LC50, 96 hours: 15300 mg/l, Pimephales promelas (Fat-head Minnow)
Flow through method.
Freshwater

Acute toxicity - aquatic invertebrates

, 48 hours: 5012 mg/l, Industry - Dermal; Long term systemic effects 22 mg/kg/day
Species: Ceriodaphnia dubia.
Static, freshwater.

Acute toxicity - aquatic plants

EC₅₀, 96 hours: 22000 mg/l, Selenastrum capricornutum
OECD Guideline 201.
Growth rate, static, freshwater. Known as Pseudokirchnerella subcapitata.

Acute toxicity - microorganisms

, 48 hours: > 10000 mg/l,
Toxicity threshold, static, freshwater, Chilomonas paramecium.

Acute toxicity - terrestrial

LC₅₀, 48 hours: < 1.0 Industry - Dermal; Long term systemic effects 22 mg/kg/day, Eisenia Fetida (Earthworm)
The result was quoted as between 0.1 - 1.0 mg/cm².

Chronic toxicity - fish early life stage

Not available.
No reliable information.
No supplied information

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Short term toxicity - embryo and sac fry stages	Not available. No information supplied.
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 10 mg/l, Daphnia magna Freshwater, semi-static.

12.2. Persistence and degradability

Phototransformation	Water - DT ₅₀ : 40 hours Indirect photolysis by hydroxyl (OH) radicals. QSAR prediction.
Stability (hydrolysis)	pH7 - Half-life <: 432 months 25 @ °C Stable to hydrolysis, half-life in absence of biodegradation. >1<36 years.
Biodegradation	Water - Degradation (%) 88: 8 days OECD 301B (Ready Biodegradability: CO2 evolution test)
Biological oxygen demand	No information available. No supplied or registered information
Chemical oxygen demand	1.99 g O ₂ /g substance COD is 95% of the theoretical.

12.3. Bioaccumulative potential

Bioaccumulative potential	Low bioaccumulation potential. BCF: < 10, Leuciscus idus (Golden orfe) Read-across value from methanol.
Partition coefficient	: log Pow = -0.35 @ 24°C, pH 7. OECD Guideline 107. OECD Test Guideline 107.

12.4. Mobility in soil

Mobility	Highly mobile in soil, ethanol remains predominantly (>99%) in the aqueous phase of a soil / water compartment.
Adsorption/desorption coefficient	Expected to have a low potential for adsorption.
Henry's law constant	0.00000617 atm m ³ /mol @ °C Literature value.
Surface tension	24.5 mN/m @ 20°C Ring method.

12.5. Results of PBT and vPvB assessment

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

Other adverse effects	Will affect drinking water supplies. Damaging effects from fire.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Any waste material is classed as hazardous waste, it should only be disposed of through licenced waste handlers and treatment sites. Do not allow unauthorised disposal to the environment. Avoid sources of ignition when handling waste. If operators are exposed to vapours during the disposal process then suitable respiratory protection should be worn. All other personal protective equipment as described in section 8 should be worn. When handling waste, the safety precautions applying to handling of the product should be considered.
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Disposal methods

Waste material should not be disposed of directly to drain. Uncleaned empty containers should be treated as hazardous waste. Avoid unauthorised disposal. Do not dump illegally onto land or into water. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. The recommended method for treatment of waste residues is either reclamation or incineration by specialist disposal company. Reuse or recycle products wherever possible. When dealing with waste always consider the waste management hierarchy of Prevention, Preparation for re-use, Recycling, Recovery and Disposal. It is advisable to minimise waste at source if possible, then re-use, recover or recycle wherever possible before considering waste disposal options.

SECTION 14: Transport information

General

For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

14.1. UN number

UN No. (ADR/RID)	2924
UN No. (IMDG)	2924
UN No. (ICAO)	2924
UN No. (ADN)	2924

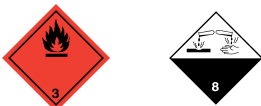
14.2. UN proper shipping name

Proper shipping name (ADR/RID)	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CONTAINS ETHANOL AND NITRIC ACID)
Proper shipping name (IMDG)	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CONTAINS ETHANOL AND NITRIC ACID)
Proper shipping name (ICAO)	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CONTAINS ETHANOL AND NITRIC ACID)
Proper shipping name (ADN)	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CONTAINS ETHANOL AND NITRIC ACID)

14.3. Transport hazard class(es)

ADR/RID class	3
ADR/RID subsidiary risk	8
ADR/RID classification code	FC
ADR/RID label	3
IMDG class	3
IMDG subsidiary risk	8
ICAO class/division	3
ICAO subsidiary risk	8
ADN class	3
ADN subsidiary risk	8

Transport labels



14.4. Packing group

ADR/RID packing group	II
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IMDG packing group	II
ADN packing group	II
ICAO packing group	II

14.5. Environmental hazards**Environmentally hazardous substance/marine pollutant**

No.

14.6. Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS	F-E, S-C
ADR transport category	2
Emergency Action Code	•3WE
Hazard Identification Number (ADR/RID)	338
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 Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

National regulations	Industry - Dermal; Long term systemic effects 22 mg/kg/day
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). Regulation (EU) 453/2010.
Guidance	Workplace Exposure Limits EH40. Approved Classification and Labelling Guide (CHIP 4) ECHA Guidance on the compilation of safety data sheets 2014. Industry - Dermal; Long term systemic effects 22 mg/kg/day

15.2. Chemical safety assessment

Information from the manufacturer of the raw material has not been received regarding Chemical Safety Assessments, Exposure Scenarios or a Chemical Safety Report.

SECTION 16: Other information

General information	This datasheet is not intended to be a replacement for a full risk assessment, these should always be carried out by competent persons. Information in sections 8, 11 and 12 refers to the main constituent ethanol.
Key literature references and sources for data	Raw material safety data sheets. ECHA website. Health Protection Agency Information. Evaluation of the Fate and Transport of Ethanol in the Environment, Malcolm Pirnie Inc. 1998.

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Revision comments	Full revision
Revision date	02/05/2017
Revision	5
Supersedes date	01/02/2016
SDS number	11216
Risk phrases in full	R11 Highly flammable. R20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R23/24/25 Toxic by inhalation, in contact with skin and if swallowed. R35 Causes severe burns. R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. R68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed. R8 Contact with combustible material may cause fire.
Hazard statements in full	H225 Highly flammable liquid and vapour. H272 May intensify fire; oxidiser. H290 May be corrosive to metals. H301 Toxic if swallowed. H311 Toxic in contact with skin. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H318 Causes serious eye damage. H319 Causes serious eye irritation. H332 Harmful if inhaled. H370 Causes damage to organs . H371 May cause damage to organs .