



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Aug-2022

Revision Number 1

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

### 1.1. Product identifier

**Product Code(s)** DRE-A50000253ET  
**Product Name** Nitrosamine Mixture 253 1000 µg/mL in Ethanol  
**Unique Formula Identifier (UFI)** YKR8-20XR-Y005-4A53  
**Pure substance/mixture** Mixture

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

**Recommended use** Laboratory use  
**Uses advised against** No information available

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

LGC Limited  
Queens Road  
Teddington  
Middlesex TW11 0LY  
UNITED KINGDOM  
:+44 (0) 20 8943 7000  
Fax :+44 (0) 20 8943 2767  
eMail : [gb@lgcstandards.com](mailto:gb@lgcstandards.com)

Web : [www.lgcstandards.com](http://www.lgcstandards.com)

For further information, please contact

**E-mail address** [sds-request@lgcgroup.com](mailto:sds-request@lgcgroup.com)

### 1.4. Emergency telephone number

**Emergency Telephone** For Hazardous Materials or Dangerous Goods Incident  
Spill, Leak, Fire Exposure, or Accident  
Call CHEMTREC:  
USA & Canada 1-800-424-9300  
Rest of the world +1 703-741-5970

#### Emergency Telephone - §45 - (EC)1272/2008

<b>Europe</b>	112
<b>Austria</b>	No information available



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Bulgaria	
Croatia	
Cyprus	
Czech Republic	
Denmark	
France	
Hungary	
Ireland	
Italy	
Lithuania	
Luxembourg	(+352) 8002 5500 Free telephone number with a 24/7 access in French, Dutch and English.
Netherlands	
Norway	
Portugal	
Romania	
Slovakia	
Slovenia	
Spain	
Sweden	
Switzerland	

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Serious eye damage/eye irritation	Category 2 - (H319)
Germ cell mutagenicity	Category 1B - (H340)
Carcinogenicity	Category 1B - (H350)
Flammable liquids	Category 2 - (H225)

### 2.2. Label elements

Contains N-Nitrosobis(2-hydroxypropyl)amine, N-Nitrosodiisopropylamine, Diethylnitrosoamine, N-nitrosodimethylamine



Signal word

Danger

### Hazard statements

H319 - Causes serious eye irritation



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H340 - May cause genetic defects

H350 - May cause cancer

H225 - Highly flammable liquid and vapour

EUH210 - Safety data sheet available on request

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

P201 - Obtain special instructions before use

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

P308 + P313 - IF exposed or concerned: Get medical advice/attention

P370 + P378 - In case of fire: Use dry chemical, CO<sub>2</sub>, water spray or alcohol-resistant foam to extinguish

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

### 2.3. Other hazards

Causes mild skin irritation. Toxic to aquatic life.

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

### Endocrine Disruptor Information

Chemical name	EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances of Very High Concern (SVHC) for Authorisation	EU - REACH (1907/2006) - Endocrine Disruptor Assessment List of Substances
Ethanol	-	-
N-nitroso-N-ethylaniline	-	-
N-Nitrosodiisobutylamine	-	-
N-Nitrosodibutylamine	-	-
N-methyl-N-nitrosoaniline	-	-
1-Nitrosopyrrolidine	-	-
1-Nitrosopiperidine	-	-

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

#### Chemical nature

Mixture of organic compounds.

Chemical name	Weight-%	REACH registration number	EC No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)



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Ethanol 64-17-5	80 - 100	-	200-578-6	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319)			
N-nitroso-N-ethylaniline 612-64-6	0.1 - 1	-	866-116-6	Acute Tox. 3 (H301) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Carc. 2 (H351)			
N-nitrosomethylaminobutyric Acid 61445-55-4	0.1 - 1	-	-	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Muta. 2 (H341) Carc. 2 (H351)			
N-Nitrosoethylisopropylamine 16339-04-1	0.1 - 1	-	835-435-2	Flam. Liq. 2 (H225) Acute Tox. 4 (H302) Carc. 2 (H351) Aquatic Chronic 3 (H412)			
N-Nitroso-di-n-propylamine 621-64-7	0.1 - 1	-	210-698-0	Acute Tox. 4 (H302) Carc. 1B (H350) Aquatic Chronic 2 (H411)	Carc. 1B :: C>=0.001%		
N-nitrosodimethylamine 62-75-9	0.1 - 1	-	200-549-8	Acute Tox. 2 (H300) Acute Tox. 2 (H330) Carc. 1B (H350) STOT RE 1 (H372) Aquatic Chronic 2 (H411)	Carc. 1B :: C>=0.001%		
N-Nitrosodiisopropylamine 601-77-4	0.1 - 1	-	-	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Carc. 1B (H350)			
N-Nitrosodiisobutylamine 997-95-5	0.1 - 1	-	213-644-4	Acute Tox. 4 (H302) Carc. 2 (H351)			
N-Nitrosodicyclohexylamine 947-92-2	0.1 - 1	-	-	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Muta. 2 (H341) Carc. 2 (H351)			
N-Nitrosodibutylamine 924-16-3	0.1 - 1	-	213-101-1	Acute Tox. 4 (H302) Carc. 2 (H351)			
N-Nitrosobis(2-hydroxypropyl)amine 53609-64-6	0.1 - 1	-	-	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Muta. 1B (H340)			



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				Carc. 1B (H350)			
N-methyl-N-nitrosobenzenemethanamine 937-40-6	0.1 - 1	-	-	Acute Tox. 2 (H300)			
N-methyl-N-nitrosoaniline 614-00-6	0.1 - 1	-	210-366-5	Acute Tox. 3 (H301) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Carc. 2 (H351)			
N-Methyl-N-nitroso-1-octadecylamine 69112-94-3	0.1 - 1	-	-	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Carc. 2 (H351) Aquatic Chronic 2 (H411)			
N-Methyl-N-nitroso-1-hexadecylamine 98648-34-1	0.1 - 1	-	-	Acute Tox. 4 (H302) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Carc. 2 (H351) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)			
Diethylnitrosoamine 55-18-5	0.1 - 1	-	200-226-1	Acute Tox. 3 (H301) Muta. 2 (H341) Carc. 1B (H350) Aquatic Chronic 3 (H412)			
1-Nitrosopyrrolidine 930-55-2	0.1 - 1	-	213-218-8	Acute Tox. 4 (H302) Carc. 2 (H351)			
1-Nitrosopiperidine 100-75-4	0.1 - 1	-	202-886-6	Acute Tox. 3 (H301) Carc. 2 (H351)			

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

#### Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components



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Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Ethanol 64-17-5	7060	No data available	124.7	No data available	No data available
N-Nitrosoethylisopropylamine 16339-04-1	1100	No data available	No data available	No data available	No data available
N-Nitroso-di-n-propylamine 621-64-7	480	No data available	No data available	No data available	No data available
N-nitrosodimethylamine 62-75-9	27	No data available	No data available	0.2363	No data available
N-Nitrosodiisopropylamine 601-77-4	850	No data available	No data available	No data available	No data available
N-Nitrosodicyclohexylamine 947-92-2	5000	No data available	No data available	No data available	No data available
N-Nitrosodibutylamine 924-16-3	1200	No data available	No data available	No data available	No data available
N-methyl-N-nitrosobenzene nemethanamine 937-40-6	18	No data available	No data available	No data available	No data available
N-methyl-N-nitrosoaniline 614-00-6	225	No data available	No data available	No data available	No data available
Diethylnitrosoamine 55-18-5	220	No data available	No data available	No data available	No data available
1-Nitrosopyrrolidine 930-55-2	900	No data available	No data available	No data available	No data available
1-Nitrosopiperidine 100-75-4	200	No data available	No data available	No data available	No data available

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

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General advice

Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

#### Inhalation

Remove to fresh air.

#### Eye contact

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



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	eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Ingestion</b>	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.
<b>Self-protection of the first aider</b>	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.

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

<b>Symptoms</b>	May cause redness and tearing of the eyes. Burning sensation. Prolonged contact may cause redness and irritation.
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### **4.3. Indication of any immediate medical attention and special treatment needed**

<b>Note to doctors</b>	Treat symptomatically.
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## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

<b>Suitable Extinguishing Media</b>	Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.
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<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
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<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
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### **5.2. Special hazards arising from the substance or mixture**

<b>Specific hazards arising from the chemical</b>	Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
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### **5.3. Advice for firefighters**

<b>Special protective equipment and precautions for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**



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### Personal precautions

Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

### Other information

Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

### For emergency responders

Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

#### Environmental precautions

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

### 6.3. Methods and material for containment and cleaning up

#### Methods for containment

Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

#### Methods for cleaning up

Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

#### Prevention of secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections

#### Reference to other sections

See section 8 for more information. See section 13 for more information.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Use personal protection equipment. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

#### General hygiene considerations

Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this



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product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage Conditions

Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up.

### 7.3. Specific end use(s)

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Ethanol 64-17-5	-	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup> STEL 2000 ppm STEL 3800 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1907 mg/m <sup>3</sup>	TWA: 1000 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>
N-nitroso-N-ethylaniline 612-64-6	-	H*	-	-	-
N-Nitroso-di-n-propylamine 621-64-7	-	H*	-	-	-
N-nitrosodimethylamine 62-75-9	-	H*	*	-	-
N-Nitrosodiisopropylamine 601-77-4	-	H*	-	-	-
N-Nitrosodibutylamine 924-16-3	-	H*	-	-	-
N-Nitrosobis(2-hydroxypropyl)amine	-	H*	-	-	-



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53609-64-6					
N-methyl-N-nitrosoaniline 614-00-6	-	H*	-	-	-
Diethylnitrosoamine 55-18-5	-	H*	-	-	-
1-Nitrosopyrrolidine 930-55-2	-	H*	-	-	-
1-Nitrosopiperidine 100-75-4	-	H*	-	-	-
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Ethanol 64-17-5	-	TWA: 1000 mg/m <sup>3</sup> Ceiling: 3000 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>	TWA: 500 ppm TWA: 1000 mg/m <sup>3</sup> STEL: 1000 ppm STEL: 1900 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup> STEL: 1300 ppm STEL: 2500 mg/m <sup>3</sup>
Chemical name	France	Germany	Germany MAK	Greece	Hungary
Ethanol 64-17-5	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup> STEL: 5000 ppm STEL: 9500 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 380 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 380 mg/m <sup>3</sup> Peak: 800 ppm Peak: 1520 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>	TWA: 1900 mg/m <sup>3</sup> STEL: 3800 mg/m <sup>3</sup>
N-nitroso-N-ethylaniline 612-64-6	-	-	*	-	-
N-Nitroso-di-n-propylamine 621-64-7	-	-	*	-	-
N-nitrosodimethylamine 62-75-9	-	Skin notation	*	-	-
N-Nitrosodiisopropylamine 601-77-4	-	-	*	-	-
N-Nitrosodibutylamine 924-16-3	-	-	*	-	-
N-methyl-N-nitrosoaniline 614-00-6	-	-	*	-	-
Diethylnitrosoamine 55-18-5	-	-	*	-	-
1-Nitrosopyrrolidine 930-55-2	-	-	*	-	-
1-Nitrosopiperidine 100-75-4	-	-	*	-	-
Chemical name	Ireland	Italy	Italy REL	Latvia	Lithuania
Ethanol 64-17-5	STEL: 1000 ppm	-	STEL: 1000 ppm STEL: 1884 mg/m <sup>3</sup>	TWA: 1000 mg/m <sup>3</sup>	TWA: 500 ppm TWA: 1000 mg/m <sup>3</sup> STEL: 1000 ppm STEL: 1900 mg/m <sup>3</sup>
N-nitrosodimethylamine 62-75-9	-	-	*	-	-
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland



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Ethanol 64-17-5	-	-	TWA: 260 mg/m <sup>3</sup> STEL: 1900 mg/m <sup>3</sup> H*	TWA: 500 ppm TWA: 950 mg/m <sup>3</sup> STEL: 625 ppm STEL: 1187.5 mg/m <sup>3</sup>	TWA: 1900 mg/m <sup>3</sup>
N-nitrosodimethylamine 62-75-9	-	-	TWA: 0.0002 mg/m <sup>3</sup>	-	TWA: 0.0025 mg/m <sup>3</sup> *
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Ethanol 64-17-5	TWA: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup> STEL: 5000 ppm STEL: 9500 mg/m <sup>3</sup>	TWA: 500 ppm TWA: 960 mg/m <sup>3</sup> Ceiling: 1920 mg/m <sup>3</sup>	TWA: 960 mg/m <sup>3</sup> TWA: 500 ppm STEL: STEL ppm STEL: STEL mg/m <sup>3</sup>	STEL: 1000 ppm STEL: 1910 mg/m <sup>3</sup>
N-nitrosodimethylamine 62-75-9	P*	-	-	TWA: 0.0025 mg/m <sup>3</sup> TWA: 0.001 mg/m <sup>3</sup> STEL: STEL mg/m <sup>3</sup>	-
Chemical name	Sweden	Switzerland	United Kingdom		
Ethanol 64-17-5	NGV: 500 ppm NGV: 1000 mg/m <sup>3</sup> Vägledande KGV: 1000 ppm Vägledande KGV: 1900 mg/m <sup>3</sup>	TWA: 500 ppm TWA: 960 mg/m <sup>3</sup> STEL: 1000 ppm STEL: 1920 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1920 mg/m <sup>3</sup> STEL: 3000 ppm STEL: 5760 mg/m <sup>3</sup>		
N-Nitroso-di-n-propylamine 621-64-7	-	TWA: 0.001 mg/m <sup>3</sup> H*		-	
N-nitrosodimethylamine 62-75-9	-	TWA: 0.001 mg/m <sup>3</sup> H*		-	
N-Nitrosodiisopropylamine 601-77-4	-	TWA: 0.001 mg/m <sup>3</sup> H*		-	
N-Nitrosodibutylamine 924-16-3	-	TWA: 0.001 mg/m <sup>3</sup> H*		-	
Diethylnitrosoamine 55-18-5	-	TWA: 0.001 mg/m <sup>3</sup> H*		-	
1-Nitrosopyrrolidine 930-55-2	-	TWA: 0.001 mg/m <sup>3</sup> H*		-	
1-Nitrosopiperidine 100-75-4	-	TWA: 0.001 mg/m <sup>3</sup> H*		-	

### Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

**Derived No Effect Level (DNEL)** No information available.  
**Predicted No Effect Concentration (PNEC)** No information available.

### 8.2. Exposure controls



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### Personal protective equipment

<b>Eye/face protection</b>	Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Tight sealing safety goggles.
<b>Hand protection</b>	Wear protective butyl rubber gloves. The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374. Wear suitable gloves. Impervious gloves.
<b>Skin and body protection</b>	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>General hygiene considerations</b>	Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.
<b>Environmental exposure controls</b>	Do not allow into any sewer, on the ground or into any body of water.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	Liquid
<b>Colour</b>	colourless
<b>Odour</b>	Alcohol.

<b>Odour threshold</b>	No information available
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<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>
<b>Melting point / freezing point</b>	-114.1 °C	None known
<b>Initial boiling point and boiling range</b>	78.3 °C	None known
<b>Flammability</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	3.1% - 59 g/m <sup>3</sup>	
<b>Lower flammability or explosive limits</b>	27.7 % - 532 g/m <sup>3</sup>	
<b>Flash point</b>	13 °C	None known
<b>Autoignition temperature</b>	No data available °C	None known
<b>Decomposition temperature</b>		None known
<b>pH</b>	No data available	None known



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<b>pH (as aqueous solution)</b>	No data available	No information available
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	1.2 mPa s	None known
<b>Water solubility</b>	No data available	None known
<b>Solubility(ies)</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Vapour pressure</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Bulk density</b>	No data available	
<b>Liquid Density</b>	No data available	
<b>Relative vapour density</b>	No data available	None known
<b>Particle characteristics</b>		
<b>Particle Size</b>	No information available	
<b>Particle Size Distribution</b>	No information available	

### 9.2. Other information

9.2.1. Information with regards to physical hazard classes  
Not applicable

9.2.2. Other safety characteristics  
No information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** No information available.

### 10.2. Chemical stability

**Stability** Stable under normal conditions.

#### **Explosion data**

**Sensitivity to mechanical impact** None.  
**Sensitivity to static discharge** Yes.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** None under normal processing.

### 10.4. Conditions to avoid

**Conditions to avoid** Heat, flames and sparks.

### 10.5. Incompatible materials

**Incompatible materials** None known based on information supplied.



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**Hazardous decomposition products** None known based on information supplied.

### SECTION 11: Toxicological information

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### Information on likely routes of exposure

###### **Product Information**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes mild skin irritation.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

##### Symptoms related to the physical, chemical and toxicological characteristics

<b>Symptoms</b>	May cause redness and tearing of the eyes. Prolonged contact may cause redness and irritation.
-----------------	--

##### Numerical measures of toxicity

###### **Acute toxicity**

**The following values are calculated based on chapter 3.1 of the GHS document**

ATEmix (oral)	8,577.60 mg/kg
ATEmix (inhalation-dust/mist)	236.30 mg/l

##### **Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethanol	= 7060 mg/kg ( Rat )		= 124.7 mg/L ( Rat ) 4 h
N-Nitrosoethylisopropylamine	= 1100 mg/kg ( Rat )		
N-Nitroso-di-n-propylamine	= 480 mg/kg ( Rat )		
N-nitrosodimethylamine	= 27 mg/kg ( Rat )		= 78 ppm ( Rat ) 4 h



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N-Nitrosodiisopropylamine	= 850 mg/kg ( Rat )		
N-Nitrosodicyclohexylamine	= 5 g/kg ( Rat )		
N-Nitrosodibutylamine	= 1200 mg/kg ( Rat )		
N-methyl-N-nitrosobenzenemethanamine	= 18 mg/kg ( Rat )		
N-methyl-N-nitrosoaniline	= 225 mg/kg ( Rat )		
Diethylnitrosoamine	= 220 mg/kg ( Rat )		
1-Nitrosopyrrolidine	= 900 mg/kg ( Rat )		
1-Nitrosopiperidine	= 200 mg/kg ( Rat )		

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

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes mild skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye irritation.

**Respiratory or skin sensitisation** No information available.

**Germ cell mutagenicity** Contains a known or suspected mutagen. Classification based on data available for ingredients. May cause genetic defects.

**Carcinogenicity** Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
N-Nitroso-di-n-propylamine	Carc. 1B
N-nitrosodimethylamine	Carc. 1B

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.



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**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

**Endocrine disrupting properties** No information available.

#### 11.2.2. Other information

**Other adverse effects** No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Ecotoxicity** Toxic to aquatic life.

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethanol	-	LC50: 12.0 - 16.0mL/L (96h, <i>Oncorhynchus mykiss</i> ) LC50: 13400 - 15100mg/L (96h, <i>Pimephales promelas</i> ) LC50: >100mg/L (96h, <i>Pimephales promelas</i> )	-	LC50: 9268 - 14221mg/L (48h, <i>Daphnia magna</i> ) EC50: =2mg/L (48h, <i>Daphnia magna</i> )

### 12.2. Persistence and degradability

**Persistence and degradability** No information available.

### 12.3. Bioaccumulative potential

**Bioaccumulation** There is no data for this product.

### **Component Information**

Chemical name	Partition coefficient
Ethanol	-0.32



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N-Nitroso-di-n-propylamine	1.46
N-nitrosodimethylamine	-0.47
N-Nitrosodiisobutylamine	2.34
N-Nitrosodibutylamine	2.63
N-methyl-N-nitrosoaniline	1.49
1-Nitrosopiperidine	0.5

### 12.4. Mobility in soil

**Mobility in soil** No information available.

### 12.5. Results of PBT and vPvB assessment

#### PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Ethanol	The substance is not PBT / vPvB PBT assessment does not apply
N-Nitroso-di-n-propylamine	The substance is not PBT / vPvB

### 12.6. Endocrine disrupting properties

**Endocrine disrupting properties** No information available.

### 12.7. Other adverse effects

No information available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Waste from residues/unused products** Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

## SECTION 14: Transport information

### IATA

14.1 UN number or ID number UN1170  
14.2 UN proper shipping name Ethanol mixture  
14.3 Transport hazard class(es) 3



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<b>14.4 Packing group</b>	II
<b>Description</b>	UN1170, Ethanol mixture, 3, II
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	A180, A3, A58
<b>ERG Code</b>	3L

### IMDG

<b>14.1 UN number or ID number</b>	UN1170
<b>14.2 UN proper shipping name</b>	Ethanol mixture
<b>14.3 Transport hazard class(es)</b>	3
<b>14.4 Packing group</b>	II
<b>Description</b>	UN1170, Ethanol mixture, 3, II, (13°C c.c.)
<b>14.5 Marine pollutant</b>	NP
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	144
<b>EMS-No</b>	F-E, S-D No information available
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	No information available

### RID

<b>14.1 UN number or ID number</b>	UN1170
<b>14.2 UN proper shipping name</b>	Ethanol mixture
<b>14.3 Transport hazard class(es)</b>	3
<b>14.4 Packing group</b>	II
<b>Description</b>	UN1170, Ethanol mixture, 3, II
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	144, 601
<b>Classification code</b>	F1

### ADR

<b>14.1 UN number or ID number</b>	UN1170
<b>14.2 UN proper shipping name</b>	Ethanol mixture
<b>14.3 Transport hazard class(es)</b>	3
<b>14.4 Packing group</b>	II
<b>Description</b>	UN1170, Ethanol mixture, 3, II, (D/E)
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	144, 601
<b>Classification code</b>	F1
<b>Tunnel restriction code</b>	(D/E)

## SECTION 15: Regulatory information

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



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### National regulations

#### France

##### Occupational Illnesses (R-463-3, France)

Chemical name	French RG number	Title
Ethanol 64-17-5	RG 84	-
N-Nitrosodibutylamine 924-16-3	RG 15ter	-

Water hazard class (WGK) strongly hazardous to water (WGK 3)

#### Netherlands

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Carcinogens	Netherlands - List of Reproductive Toxins
Ethanol	Present	-	Fertility Category 1A Development Category 1A Can be harmful via breastfeeding
N-Nitroso-di-n-propylamine	Present	-	-
N-nitrosodimethylamine	Present	-	-
N-Nitrosodiisopropylamine	Present	-	-
N-Nitrosodibutylamine	Present	-	-
DiethylNitrosoamine	Present	-	-
1-Nitrosopyrrolidine	Present	-	-
1-Nitrosopiperidine	Present	-	-

#### Poland

SDS created according to the following Polish regulation: Act of February 25, 2011 on chemical substances and their mixtures (Journal of Laws of 2018, item 143, as amended). Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing the European Chemicals Agency (EC) as amended. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, as amended. Regulation of the Minister of Health of 10 August 2012 on the criteria and method of classifying chemical substances and their mixtures (Journal of Laws of 2012, item 1018). Regulation of the Minister of Health of 20 April 2012 on labeling packaging of hazardous substances and mixtures and some mixtures (Journal of Laws of 2012, item 445). Regulation of the Minister of Family, Labor and Social Policy of 12 June 2018 on the maximum allowable concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286). Announcement of the Minister of Economy, Labor and Social Policy of August 28, 2003 on the publication of the unified text of the Ordinance of the Minister of Labor and Social Policy on general health and safety at work regulations (Journal of Laws



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of 2003, No. 169, item 1650) . Regulation of the Minister of Health of 30 December 2004 on occupational safety and health related to the presence of chemical agents in the workplace (Journal of Laws of 2005, No. 11, item 86). Act of December 14, 2012 on waste (Journal of Laws of 2013, item 21) Regulation of the Minister of Health of December 30, 2004 on occupational health and safety related to the presence of chemical agents in the workplace (Journal U. of 2005, No. 11, item 86). Waste Act of December 14, 2012 (Journal of Laws of 2013, item 21). Act of 13 June 2013 on the management of packaging and packaging waste, Journal of Laws 2013, item 888). Government statement of September 24, 2002 - European Agreement on the International Carriage of Dangerous Goods by Road (ADR) (Journal of Laws No. 194, item 1629 and Journal of Laws of 2003, No. 207, item 2013 and 2014).

### European Union

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

### Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

### DIRECTIVE (EU) 2021/1187 on the marketing and use of explosives precursors

Not applicable

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
N-Nitroso-di-n-propylamine - 621-64-7	28.	
N-nitrosodimethylamine - 62-75-9	28.	

### Persistent Organic Pollutants

Not applicable

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

P5a - FLAMMABLE LIQUIDS

P5b - FLAMMABLE LIQUIDS

P5c - FLAMMABLE LIQUIDS

### Named dangerous substances per Seveso Directive (2012/18/EU)

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
N-nitrosodimethylamine - 62-75-9	0.5	2

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

Not applicable

### International Inventories

TSCA

Contact supplier for inventory compliance status



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DSL/NDSL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status

### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

### 15.2. Chemical safety assessment

#### Chemical Safety Report

A Chemical Safety Assessment is not required for this substance

## SECTION 16: Other information

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

#### **Full text of H-Statements referred to under section 3**

H225 - Highly flammable liquid and vapour

H300 - Fatal if swallowed

H301 - Toxic if swallowed

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H315 - Causes skin irritation

H318 - Causes serious eye damage

H319 - Causes serious eye irritation

H330 - Fatal if inhaled

H340 - May cause genetic defects

H341 - Suspected of causing genetic defects

H350 - May cause cancer

H351 - Suspected of causing cancer

H372 - Causes damage to organs through prolonged or repeated exposure

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H411 - Toxic to aquatic life with long lasting effects

H412 - Harmful to aquatic life with long lasting effects



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### Legend

SVHC: Substances of Very High Concern for Authorisation:

### Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method
Flammable liquids	On basis of test data

### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)



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Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

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

#### Disclaimer

The information in this safety data sheet (SDS) has been prepared with due care and is true and accurate to the best of our knowledge. The user must determine the suitability of the information for its particular purpose, ensure compliance with existing laws and regulations, and be aware that other or additional safety or performance considerations may arise when using, handling and/ or storing the material. The information in this SDS does not purport to be all inclusive or a guarantee as to the properties of the material supplied, and should be used only as a guide. LGC makes no warranties or representations as to the accuracy and completeness of the information contained herein, shall not be held responsible for the suitability of this information for the user's intended purposes or the consequences of such use, and shall not be liable for any damage or loss, howsoever arising, direct or otherwise.

**End of Safety Data Sheet**