

SAFETY DATA SHEET



n-Nonanol
11620

Version / Revision
Supersedes Version

2.01
2.00***

Revision Date
Issuing date

04-Dec-2020
04-Dec-2020

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

1.1. Product identifier

Identification of the
substance/preparation

n-Nonanol

Chemical Name Nonan-1-ol
CAS-No 143-08-8
EC No. 205-583-7
Registration number (REACH) 01-2119486462-33

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

Identified uses Transported isolated intermediate (1907/2006)
Uses advised against None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking **OQ Chemicals GmbH**
Identification Rheinpromenade 4A
D-40789 Monheim
Germany

Product Information Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 670 (UK)
available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Serious eye damage/eye irritation Category 2, H319
Environmental hazard Aquatic Chronic 3; H412

Additional information

For full text of Hazard- and EU Hazard-statements see SECTION 16.

2.2. Label elements

Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).

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Hazard pictograms



Signal word

Warning

Hazard statements

H319: Causes serious eye irritation.
H412: Harmful to aquatic life with long lasting effects.

Precautionary statements

P273: Avoid release to the environment.
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.
P337 + P313: If eye irritation persists: Get medical advice/ attention.
P501: Dispose of contents/container in accordance with local regulation.

2.3. Other hazards

Vapour/air-mixtures are explosive at intense warming

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	REACH-No	1272/2008/EC	Concentration (%)
Nonan-1-ol	143-08-8	01-2119486462-33	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	> 93

For full text of Hazard- and EU Hazard-statements see SECTION 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Skin

Wash off immediately with soap and plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

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Ingestion

Call a physician immediately. Do not induce vomiting without medical advice.

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

Main symptoms

cough, nausea, gastrointestinal discomfort, vomiting.

Special hazard

Lung irritation.

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

General advice

Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. If ingested, irrigate the stomach using activated charcoal.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

alcohol-resistant foam, dry chemical, carbon dioxide (CO₂), water spray

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of:

carbon monoxide (CO)

carbon dioxide (CO₂)

Combustion gases of organic materials must in principle be graded as inhalation poisons

Vapours are heavier than air and may spread along floors

Vapour/air-mixtures are explosive at intense warming

5.3. Advice for firefighters

Special protective equipment for firefighters

Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting

Cool containers / tanks with water spray. Water run-off can cause environmental damage. Dike and collect water used to fight fire. Keep people away from and upwind of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.

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For emergency responders: Personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant). Water runoff can cause environmental damage.

6.3. Methods and material for containment and cleaning up

Methods for containment

Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment

See Section 8: Environmental exposure controls.

Incompatible products

strong acids
strong oxidizing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapour/air-mixtures are explosive at intense warming.

Technical measures/Storage conditions

Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.

Temperature class

T3

7.3. Specific end use(s)

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Transported isolated intermediate (1907/2006)

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits European Union

No exposure limits established

Exposure limits UK

No exposure limits established.

DNEL & PNEC

This substance is registered as intermediate under strictly controlled conditions.

Nonan-1-ol, CAS: 143-08-8

Workers

DN(M)EL - long-term exposure - systemic effects - Inhalation	176*** mg/m ³ ***
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified***
DN(M)EL - long-term exposure - local effects - Inhalation	118*** mg/m ³ ***
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified***
DN(M)EL - long-term exposure - systemic effects - Dermal	83,3*** mg/kg bw/day***
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified***
DN(M)EL - long-term exposure - local effects - Dermal	190*** mg/kg b.w./day***
DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified***
DN(M)EL - local effects - eyes	Low hazard (no threshold derived)***

General population

DN(M)EL - long-term exposure - systemic effects - Inhalation	43,5*** mg/m ³ ***
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified***
DN(M)EL - long-term exposure - local effects - Inhalation	No hazard identified***
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified***
DN(M)EL - long-term exposure - systemic effects - Dermal	41,7*** mg/kg bw/day***
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified***
DN(M)EL - long-term exposure - local effects - Dermal	67*** µg/cm ² ***
DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified***
DN(M)EL - long-term exposure - systemic effects - Oral	12,5*** mg/kg bw/day***
DN(M)EL - acute / short-term exposure - systemic effects - Oral	No hazard identified***
DN(M)EL - local effects - eyes	Low hazard (no threshold derived)***

Environment

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PNEC aqua - freshwater	0,04*** mg/l***
PNEC aqua - marine water	0,004*** mg/l***
PNEC STP	No hazard identified***
PNEC sediment - freshwater	0,98*** mg/kg dw***
PNEC sediment - marine water	0,098*** mg/kg dw***
PNEC Air	No hazard identified***
PNEC soil	0,17*** mg/kg dw***
Secondary poisoning	No potential for bioaccumulation***

8.2. Exposure controls

Special adaptations (REACH)

The substance has been registered as an transported isolated intermediate and must be handled throughout its life cycle under strictly controlled conditions in accordance with Article 18.4, REACH.

Appropriate Engineering controls

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Engineering and risk Management measures should maintain strictly controlled conditions. This also applies to environmental exposure controls.

Personal protective equipment

General industrial hygiene practice

Avoid contact with skin, eyes and clothing. Do not breathe dust or mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Equipment should conform to EN 166

Hand protection

Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material	nitrile rubber
Reference substance	2-Ethylhexanol
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,55 mm
Break through time	> 480 min
Suitable material	polyvinylchloride / nitrile rubber
Reference substance	2-Ethylhexanol
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,9 mm
Break through time	> 480 min

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Skin and body protection

Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Respiratory protection

Respirator with A filter. Full mask with above mentioned filter according to producers using requirements or self-contained breathing apparatus. Equipment should conform to EN 136 or EN 140 and EN 143.

Environmental exposure controls

If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

Additional advice

Further details on substance data can be found in the registration dossier under the following link:
<http://echa.europa.eu/information-on-chemicals/registered-substances>.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid				
Colour	colourless				
Odour	alcoholic				
Odour threshold	No data available				
pH	No data available				
Melting point/range	-3 °C (Pour point) @ 1013 hPa***				
Method	ASTM D 97-08-8***				
Boiling point/range	212 °C @ 1013 hPa***				
Method	ASTM E 537				
Flash point	98,75 °C @ 1023 hPa				
Method	ASTM D-93				
Evaporation rate	No data available				
Flammability (solid, gas)	Does not apply, the substance is a liquid				
Lower explosion limit	No data available				
Upper explosion limit	No data available				
Vapour pressure					
Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
0,017***	0,0017***	<0,001***	20	68	NFT 20-048***
0,345***	0,0345***	<0,001***	50	122	NFT 20-048***
Vapour density	No data available				
Relative density					
Values	@ °C	@ °F	Method		
0,828	20	68	ASTM D 4052		
Solubility	69,54 mg/l @ 20 °C, in water, OECD 105				
log Pow	4,1 (measured), OECD 117				
Autoignition temperature	280 °C @ 1013 hPa***				
Method	ASTM E 659				
Decomposition temperature	No data available				
Viscosity	12,97 mm ² /s @ 20°C				

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Method	kinematic, ASTM D 446
Explosive properties	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties

9.2. Other information

Molecular weight	144,26
Molecular formula	C ₉ H ₂₀ O
log Koc	2,32 OECD 121***
Dissociation constant	pKa 15,76 @ 25 °C (77 °F)***
Refractive index	1,4338 @ 20 °C
Surface tension	17,8 mN/m @ 22,5 °C (72,5 °F) @ 102,4 mg/l

SECTION 10: Stability and Reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Vapour/air-mixtures are explosive at intense warming. Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

strong acids, strong oxidizing agents.

10.6. Hazardous decomposition products

No decomposition if used as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact

Acute toxicity				
Nonan-1-ol (143-08-8)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	> 5000 mg/kg	rat female	OPPTS 870.1100 read across***
Dermal	LD50	> 5000 mg/kg	rat, male/female	OPPTS 870.1200

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				read across***
Inhalative	LC50	> 71 mg/l (1 h)	rat, male/female	read across (mist)

Nonan-1-ol, CAS: 143-08-8

Assessment

Based on available data, the classification criteria are not met for:

Acute oral toxicity
Acute dermal toxicity
Acute inhalation toxicity
STOT SE

Irritation and corrosion

Nonan-1-ol (143-08-8)

Target Organ Effects	Species	Result	Method	
Skin	rabbit	Mild skin irritation	OECD 404	
Eyes	rabbit	Moderate eye irritation	EPA OPPTS 870.2400	read across

Nonan-1-ol, CAS: 143-08-8

Assessment

The available data lead to the classification given in section 2
Based on available data, the classification criteria are not met for:
skin irritation/corrosion
For respiratory irritation, no data are available

Sensitization

Nonan-1-ol (143-08-8)

Target Organ Effects	Species	Evaluation	Method	
Skin	guinea pig male/female***	not sensitizing	Draize Test	read across

Nonan-1-ol, CAS: 143-08-8

Assessment

Based on available data, the classification criteria are not met for:
Skin sensitization
For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity

Nonan-1-ol (143-08-8)

Type	Dose	Species	Method	
Subchronic toxicity	NOAEL: 2000 mg/kg/d	rat, male/female	OECD 422 Oral	read across
Subchronic toxicity	NOAEL: 1127 mg/kg/d (90d)	rat, male	Oral	read across
Subchronic toxicity	NOAEL: 1243 mg/kg/d (90d)	rat, female	Oral	read across

Nonan-1-ol, CAS: 143-08-8

Assessment

Based on available data, the classification criteria are not met for:
STOT RE

Carcinogenicity, Mutagenicity, Reproductive toxicity

Nonan-1-ol (143-08-8)

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Type	Dose	Species	Evaluation	Method	
Mutagenicity		mouse lymphoma cells	negative	OECD 476 (Mammalian Gene Mutation)	In vitro study read across
Mutagenicity		Salmonella typhimurium	negative	OECD 471 (Ames)	In vitro study read across
Mutagenicity		mouse male/female***	negative	OECD 474	in vivo read across
Reproductive toxicity	NOAEL: 1127 mg/kg/d (90 d)	rat, parental, male		Oral	read across
Reproductive toxicity	NOAEL: 1243 mg/kg/d (90 d)	rat, parental, female		Oral	read across
Reproductive toxicity	NOAEL >= 2000 mg/kg/d	Rat, prenatal, female rat, 1. Generation, male/female***		OECD 422, Oral	read across
Developmental Toxicity	NOAEL 1300 mg/kg/d	rat		OECD 414, Oral	Teratogenicity read across***
Developmental Toxicity	NOAEC: 0,15 mg/l	rat, female***		Inhalation	Maternal toxicity Teratogenicity
Reproductive toxicity Developmental Toxicity***	NOAEL 130 mg/kg/d***	rat***		OECD 414***	Maternal toxicity read across***

Nonan-1-ol, CAS: 143-08-8

CMR Classification

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B

Evaluation

In vitro tests did not show mutagenic effects

Nonan-1-ol, CAS: 143-08-8

Main symptoms

cough, nausea, gastrointestinal discomfort, vomiting.

Target Organ Systemic Toxicant - Single exposure

Based on available data, the classification criteria are not met for:
STOT SE

Target Organ Systemic Toxicant - Repeated exposure

Based on available data, the classification criteria are not met for:
STOT RE

Aspiration toxicity

no data available

Note

Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:

<http://echa.europa.eu/information-on-chemicals/registered-substances>.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity

Nonan-1-ol (143-08-8)

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Species	Exposure time	Dose	Method
Pimephales promelas (fathead minnow)	96h	LC50: 5,7 mg/l	OECD 203
Nitocra spinipes	96h	LC50: 25 mg/l	OECD 202
Algae	72h	EC50: 5,1 mg/l (Growth rate) ^{***}	QSAR ^{***}
Pseudomonas putida ^{***}	16 h ^{***}	EC3: > 50 mg/l ^{***}	ISO 10712 ^{***}

Long term toxicity

Nonan-1-ol (143-08-8)

Type	Species	Dose	Method
Reproductive toxicity	Daphnia magna (Water flea)	NOEC: 0,4 - 0,7 mg/l (21d)	QSAR
Aquatic toxicity ^{***}	Algae ^{***}	EC10: 2,1 mg/l (72 h) ^{***}	QSAR ^{***}
Aquatic toxicity ^{***}	Pimephales promelas (fathead minnow) ^{***}	NOEC: 0,26 mg/l (33d) ^{***}	

Sediment toxicity

Nonan-1-ol (143-08-8)

Species	Exposure time	Dose	Type	Method
Heterocypris incongruens ^{***}	6 d ^{***}	EC50: 150 mg/kg sediment dw ^{***}	Reproduction and survival ^{***}	EPA OPPTS 850.1735 read across ^{***}

Terrestrial toxicity

Nonan-1-ol (143-08-8)

Species	Exposure time	Dose	Type	Method
Anas platyrhynchos (mallard duck) ^{***}	14 d ^{***}	LD50: >4640 mg/kg bw ^{***}	Mortality ^{***}	read across ^{***}
Gallus domesticus (chicken) ^{***}	21 d ^{***}	NOEC: 200000 ppm ^{***}	Mortality ^{***}	OECD 223 read across ^{***}

12.2. Persistence and degradability

Nonan-1-ol, CAS: 143-08-8

Biodegradation

92 % (28 d), activated sludge (domestic), aerobic, OECD 310, read across, Weight of evidence.^{***}

Abiotic Degradation

Nonan-1-ol (143-08-8)

Type	Result	Method
Hydrolysis ^{***}	not expected ^{***}	
Photolysis ^{***}	Half-life (DT50): 27,6 h ^{***}	calculated ^{***}

12.3. Bioaccumulative potential

Nonan-1-ol (143-08-8)

Type	Result	Method
log Pow	4,1 @ 25 °C (77 °F) ^{***}	measured, OECD 117

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BCF***	15 l/kg***	
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12.4. Mobility in soil

Nonan-1-ol (143-08-8)		
Type	Result	Method
Surface tension	17,8 mN/m @ 22,5 °C (72,5 °F) @ 102,4 mg/l	
Adsorption/Desorption***	Koc: 211***	OECD 121***
Distribution to environmental compartments***	no data available***	

12.5. Results of PBT and vPvB assessment

Nonan-1-ol, CAS: 143-08-8

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Other adverse effects

Nonan-1-ol, CAS: 143-08-8

No data available

Note

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Information

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Hazardous waste according to European Waste Catalogue (EWC)

Uncleaned empty packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

Section 14.1 - 14.6

ADR/RID

Not restricted

ADN

ADN Container
Not restricted

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ICAO-TI / IATA-DGR

Not restricted

IMDG

Not restricted

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

Product name	Nonyl alcohol
Ship type	2
Pollution category	Y

SECTION 15: Regulatory information

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

Regulation 1272/2008, Annex VI

not listed

DI 2012/18/EU (Seveso III)

Category not subject

DI 1999/13/EC (VOC Guideline)

Component	Status
Nonan-1-ol CAS: 143-08-8	regulated

International Inventories

Nonan-1-ol, CAS: 143-08-8

AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2055837 (EU)
ENCS (2)-217 (JP)
ISHL (2)-217 (JP)
KECI KE-26184 (KR)
INSQ (MX)
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)

National regulatory information Great Britain

Releases to air (Pollution Inventory Substances)

not subject

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Releases to water (Pollution Inventory Substances)

not subject

Releases to sewer (Pollution Inventory Substances)

not subject

For details and further information please refer to the original regulation

15.2. Chemical safety assessment

The Chemical Safety Report (CSR) is not required.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3

H319: Causes serious eye irritation.

H412: Harmful to aquatic life with long lasting effects.

Abbreviations

A table of terms and abbreviations can be found under the following link:

http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf

Training advice

For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet

Observe national and local legal requirements. Changes against the previous version are marked by ***.

The annex is not required because the substance is registered as an intermediate under REACH

Disclaimer

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet