

# SAFETY DATA SHEET



n-Valeric acid

10620

Version / Revision

6.01

Revision Date

09-Nov-2021

Supersedes Version

6.00\*\*\*

Issuing date

09-Nov-2021

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

### 1.1. Product identifier

Identification of the substance/preparation

**n-Valeric acid**

Chemical Name

Valeric acid

CAS-No

109-52-4

EC No.

203-677-2

### 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 Identification

**OQ Chemicals GmbH**  
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)

Skin corrosion/irritation Category 1B, H314

Serious eye damage/eye irritation Category 1, H318

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

**Danger**

### Hazard statements

H314: Causes severe skin burns and eye damage.  
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.  
P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310: Immediately call a POISON CENTER/doctor.

## 2.3. Other hazards

Components of the product may be absorbed into the body by inhalation and ingestion  
Vapour/air-mixtures are explosive at intense warming

**PBT and vPvB assessment** Not required

## SECTION 3: Composition / information on ingredients

### 3.1. Substances

Component	CAS-No	1272/2008/EC	Concentration (%)
Valeric acid	109-52-4	Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Chronic 3; H412	> 98,50

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

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

## 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

central nervous system depression, unconsciousness, shortness of breath, vomiting.

### Special hazard

Lung irritation, Lung oedema.

## 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, flush stomach and compensate acidosis.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

foam, dry chemical, carbon dioxide (CO<sub>2</sub>), 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 (CO<sub>2</sub>)

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

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

## SECTION 6: Accidental release measures

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

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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.

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

bases  
amines  
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. Keep at temperatures between 0 and 54 °C (32 and 130 °F).

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**Suitable material**  
stainless steel

**Unsuitable material**  
copper, nickel

**Temperature class**  
T2

## 7.3. Specific end use(s)

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.

#### Valeric acid, CAS: 109-52-4

##### Workers

No data available

##### General population

No data available

##### Environment

No data available

### 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.

#### Personal protective equipment

#### **General industrial hygiene practice**

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Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray 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.

<b>Suitable material</b>	nitrile rubber
<b>Evaluation</b>	according to EN 374: level 6
<b>Glove thickness</b>	approx 0,55 mm
<b>Break through time</b>	> 480 min

<b>Suitable material</b>	polyvinylchloride
<b>Evaluation</b>	Information derived from practical experience
<b>Glove thickness</b>	approx 0,8 mm

## 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

<b>Appearance</b>	liquid @ 20 °C (68 °F)
<b>Colour</b>	colourless
<b>Odour</b>	unpleasant
<b>Odour threshold</b>	No data available
<b>pH</b>	3,3 (10 g/l in water @ 25 °C (77 °F)) DIN 19268
<b>Melting point/range</b>	-35 °C (Pour point)
<b>Method</b>	DIN ISO 3016
<b>Boiling point/range</b>	186 °C @ 1013 hPa

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<b>Method</b>	OECD 103***
<b>Flash point</b>	89 °C @ 1013 hPa***
<b>Method</b>	ISO 2719
<b>Evaporation rate</b>	No data available
<b>Flammability (solid, gas)</b>	Does not apply, the substance is a liquid
<b>Lower explosion limit</b>	2,7 Vol %
<b>Upper explosion limit</b>	7,6 Vol %

## Vapour pressure

Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
0,2	0,02	< 0,001	20	68	DIN EN 13016-2
2,3	0,23	0,002	50	122	DIN EN 13016-2

**Vapour density** 3,5 (Air = 1) @ 20 °C (68 °F)

## Relative density

Values	@ °C	@ °F	Method
0,94	20	68	DIN 51757

**Solubility** 37,5 g/l @ 20 °C, in water, OECD 105  
**log Pow** 1,8 @ 25 °C (77 °F), measured, OECD 117\*\*\*

**Autoignition temperature** 410 °C @ 1003 hPa\*\*\*

**Method** DIN 51794

**Decomposition temperature** No data available

**Viscosity** 2,173 mPa\*s @ 20 °C

**Method** ASTM D445, dynamic\*\*\*

**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

<b>Molecular weight</b>	102,13
<b>Molecular formula</b>	C5 H10 O2
<b>Dissociation constant</b>	pKa 4,8 @ 22,5 °C (72,5 °F) OECD 112***
<b>Refractive index</b>	1,408 @ 20 °C
<b>Surface tension</b>	51,6 mN/m (1 g/l @ 20°C (68°F)), OECD 115

## 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

Hazardous polymerisation does not occur.

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## 10.4. Conditions to avoid

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

## 10.5. Incompatible materials

bases, amines, strong oxidizing agents.

## 10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

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

Acute toxicity				
Valeric acid (109-52-4)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	4600 mg/kg	rat, male/female	OECD 401
Dermal	LD50	> 2000 mg/kg (24 h)	rat, male/female	OECD 402
Inhalative***	LC0***	11,63 mg/l (7 h)***	rat, male/female***	

#### Valeric acid, CAS: 109-52-4

##### Assessment

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

Acute oral toxicity

Acute dermal toxicity

STOT SE

An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration

Irritation and corrosion				
Valeric acid (109-52-4)				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	corrosive		3 min
Eyes	rabbit	corrosive		

#### Valeric acid, CAS: 109-52-4

##### Assessment

The available data lead to the classification given in section 2

For respiratory irritation, no data are available

#### Valeric acid, CAS: 109-52-4

##### Assessment

Skin sensitization was not tested due to the corrosive properties of the substance

For skin sensitization, no data are available

For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity				
Valeric acid (109-52-4)				



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Type	Dose	Species	Method	
no data available				

## **Valeric acid, CAS: 109-52-4**

### **Assessment**

Due to lack of data, a classification is not possible for:  
STOT RE

## **Carcinogenicity, Mutagenicity, Reproductive toxicity**

### **Valeric acid (109-52-4)**

Type	Dose	Species	Evaluation	Method	
Mutagenicity		Salmonella typhimurium	negative	OECD 471 (Ames)	In vitro study
Mutagenicity		CHO (Chinese Hamster Ovary) cells	positive (with metabolic activation)***	OECD 473 (Chromosomal Aberration)	In vitro study
Mutagenicity		CHO (Chinese Hamster Ovary) cells	positive	OECD 479 (SCE)	In vitro study
Mutagenicity		CHO (Chinese Hamster Ovary) cells	negative	OECD 476 (Mammalian Gene Mutation)	In vitro study
Mutagenicity		mouse	negative	OECD 474	in vivo
Developmental Toxicity***	NOEL 50 mg/kg/d***	rat***		Oral***	Developmental toxicity***
Developmental Toxicity***	NOAEL 750 mg/kg/d***	rat***		OECD 414, Oral***	Maternal toxicity, Embryotoxicity***

## **Valeric acid, CAS: 109-52-4**

### **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**

No developmental effects in the absence of maternal toxicity  
Did not show mutagenic effects in animal experiments\*\*\*

## **Valeric acid, CAS: 109-52-4**

### **Main symptoms**

central nervous system depression, unconsciousness, shortness of breath, 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**

Due to lack of data, a classification is not possible for:  
STOT RE

### **Aspiration toxicity**

no data available

### **Other adverse effects**

Components of the product may be absorbed into the body by inhalation and ingestion.

### **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>.

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## SECTION 12: Ecological information

### 12.1. Toxicity

Acute aquatic toxicity			
Valeric acid (109-52-4)			
Species	Exposure time	Dose	Method
Daphnia magna (Water flea)	48h	EC50: 88,1 mg/l***	OECD 202 read across
Pseudokirchneriella subcapitata	72h	EC50: 29,3 mg/l (Growth rate)***	OECD 201
Pimephales promelas (fathead minnow)	96h	LC50: 39 mg/l	OECD 203

Long term toxicity			
Valeric acid (109-52-4)			
Type	Species	Dose	Method
Aquatic toxicity	Pseudokirchneriella subcapitata	NOAEC: 12,6 mg/l (3d)	OECD 201

### 12.2. Persistence and degradability

**Valeric acid, CAS: 109-52-4**

#### Biodegradation

72 % (10 d), activated sludge, non-adapted, aerobic.

Abiotic Degradation		
Valeric acid (109-52-4)		
Type	Result	Method
Hydrolysis	not expected	
Photolysis	No data available	

### 12.3. Bioaccumulative potential

Valeric acid (109-52-4)		
Type	Result	Method
log Pow	1,8 @ 25 °C (77 °F)***	measured, OECD 117
BCF***	No data available***	

### 12.4. Mobility in soil

Valeric acid (109-52-4)		
Type	Result	Method
Surface tension	51,6 mN/m (1 g/l @ 20°C (68°F))	OECD 115
Adsorption/Desorption	no data available	
Distribution to environmental compartments	no data available	

### 12.5. Results of PBT and vPvB assessment

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## Valeric acid, CAS: 109-52-4

### **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**

### Valeric acid, CAS: 109-52-4

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**

### ADR/RID

<b>14.1. UN number</b>	UN 3265
<b>14.2. UN proper shipping name</b>	Corrosive liquid, acidic, organic, n.o.s. (n-Valeric acid)
<b>14.3. Transport hazard class(es)</b>	8
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	no
<b>14.6. Special precautions for user</b>	
ADR Tunnel restriction code	(E)
Classification Code	C3
Hazard Number	80

### ADN

ADN Container

<b>14.1. UN number</b>	UN 3265
<b>14.2. UN proper shipping name</b>	Corrosive liquid, acidic, organic, n.o.s. (n-Valeric acid)
<b>14.3. Transport hazard class(es)</b>	8
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	no
<b>14.6. Special precautions for user</b>	
Classification Code	C3

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Hazard Number 80

## ADN

ADN Tanker	
14.1. UN number	UN 3265
14.2. UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (n-Valeric acid)
14.3. Transport hazard class(es)	8
Subsidiary Risk	N3
14.4. Packing group	II
14.5. Environmental hazards	no
14.6. Special precautions for user	
Classification Code	C3

## ICAO-TI / IATA-DGR

14.1. UN number	UN 3265
14.2. UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (n-Valeric acid)
14.3. Transport hazard class(es)	8
14.4. Packing group	II
14.5. Environmental hazards	no
14.6. Special precautions for user	no data available

## IMDG

14.1. UN number	UN 3265
14.2. UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (n-Valeric acid)
14.3. Transport hazard class(es)	8
14.4. Packing group	II
14.5. Environmental hazards	no
14.6. Special precautions for user	
EmS	F-A, S-B
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code	
Product name	Pentanoic acid
Ship type	3
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**

#### **Valeric acid, CAS: 109-52-4**

<b>Classification</b>	Skin Corr. 1B; H314 Aquatic Chronic 3; H412
<b>Hazard pictograms</b>	GHS05 Corrosion
<b>Signal word</b>	Danger

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**Hazard statements** H314, H412

**DI 2012/18/EU (Seveso III)**

**Category** not subject

**DI 1999/13/EC (VOC Guideline)**

Component	Status
Valeric acid CAS: 109-52-4	regulated

**The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 No. 758**

Component	Status
Valeric acid CAS: 109-52-4	The substance will not be pre-registered

For details and further information please refer to the original regulation.

**International Inventories**

**Valeric acid, CAS: 109-52-4**

AICS (AU)  
DSL (CA)  
IECSC (CN)  
EC-No. 2036772 (EU)  
ENCS (2)-608 (JP)  
ISHL (2)-608 (JP)  
KECI KE-35263 (KR)  
INSQ (MX)  
PICCS (PH)  
TSCA (US)  
NZIoC (NZ)\*\*\*  
TCSI (TW)

**National regulatory information Great Britain**

**Releases to air (Pollution Inventory Substances)**

not subject

**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**

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

H314: Causes severe skin burns and eye damage.  
H318: Causes serious eye damage.  
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](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

Changes against the previous version are marked by \*\*\*. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage ([www.chemicals.oq.com](http://www.chemicals.oq.com)).

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**