

Isononanoic acid

10310

Version / Revision4.01Revision Date30-Sep-2021Supersedes Version4.00***Issuing date30-Sep-2021

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

1.1. Product identifier

Identification of the substance/preparation

Isononanoic acid

Chemical Name 3,5,5-Trimethylhexanoic acid

CAS-No 3302-10-1 **EC No.** 221-975-0

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

Use of the Substance /

Preparation

Intermediate, lubricant.

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

NCEC +1 202 464 2554 available 24/7

Local emergency telephone +

number

+61 2 8014 4558 (Australia)

18000 74234 (Australia toll-free number)

+64 9 929 1483 (New Zealand)

0800 446 881 (New Zealand toll-free number)

+65 3158 1195 (Sri Lanka)

007 803 011 0293 (Indonesia toll-free number)

+60 3 6207 4347 (Malaysia)

001 800 120 666 751 (Thailand toll-free number)

+65 3158 1200 (Bangladesh) +63 2 8231 2149 (Philippines) +84 28 4458 2388 (Vietnam) +65 3165 2217 (Singapore)

available 24/7

SECTION 2: Hazards identification



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Europe

2.1. Classification of the substance or mixture

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

Acute oral toxicity Category 4, H302 Skin corrosion/irritation Category 2, H315 Serious eye damage/eye irritation Category 1, H318

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).

Hazard pictograms



Signal word	Danger
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Hazard statements H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

Precautionary statements P280: Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P330: IF SWALLOWED: Rinse mouth

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

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

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)

USA

2.1. Classification of the substance or mixture

This substance is classified in accordance with paragraph (d) of §1910.1200 (GHS-US classification).

Acute oral toxicity Category 4, H302 Skin corrosion/irritation Category 2, H315



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Serious eye damage/eye irritation Category 1, H318 Environmental hazard Aquatic Acute 3; H402

OSHA Specified Hazards Not applicable.

2.2. Label elements

Labeling according to §1910.1200 (GHS-US labeling).

Hazard symbol(s)



Signal word

Danger

Hazard statements H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H402: Harmful to aquatic life

Precautionary statements

Prevention P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P273: Avoid release to the environment.

P280: Wear protective gloves/eye protection/face protection.

Response P301 + P312: IF SWALLOWED: Call a POISON CENTRE/doctor if you feel

unwell.

P330: Rinse mouth.

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

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.

P362 + P364: Take off contaminated clothing and wash it before reuse.

Disposal P501: Dispose of contents/container in accordance with local regulation.

2.3. Other hazards

Vapour/air-mixtures are explosive at intense warming

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	REACh-No	1272/2008/EC	Concentration (%)
3,5,5-Trimethylhexanoic acid***	3302-10-1	01-2119517580-45	Acute Tox. 4; H302 Skin Irrit. 2; H315	88,5 - 100



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	Eye Dam. 1; H318	

Remarks

Mixture of isomeric Isononanoic acids, mainly 3,5,5-Trimethylhexanoic acid.

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.

Eyes

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

Skin

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

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, headache, nausea, shortness of breath.

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 (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 Vapour/air-mixtures are explosive at intense warming



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Vapours are heavier than air and may spread along floors

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. 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. 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).

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.



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Incompatible products

bases amines

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 38 °C (32 and 100 °F).

Suitable material

stainless steel

Unsuitable material

mild steel, copper, brass, including their alloys

Temperature class

T2

7.3. Specific end use(s)

Intermediate
Formulation
Lubricants
Metal working fluids / rolling oils
Use in laboratories***

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits European Union

No exposure limits established

Exposure limits Germany

MAK-values from the DFG

Component	MAK (ppm)	MAK (mg/m³)	listed w/o limits	Ceiling limit value
3,5,5-Trimethylhexanoic			Ja / Yes	
acid***				
CAS: 3302-10-1				

Note

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

Exposure limits United States of America



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No exposure limits established.

8.2. Exposure controls

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

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

Safety glasses with side-shields. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

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

Evaluation according to EN 374: level 6

Glove thickness approx 0,55 mm

Break through time > 480 min

Suitable material polyvinylchloride

Evaluation Information derived from practical experience

Glove thickness approx 0.8 mm

Skin and body protection

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

Respiratory protection

Respirator with filter for organic vapour. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Equipment should conform to NIOSH, EN or other applicable national standards.

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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties



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Appearance liquid @ 20 °C (68 °F)

ColourcolourlessOdourslightly acidicOdour thresholdNo data available

pH 4,4 (0,1 g/l in water @ 25 °C (77 °F)) DIN 19268***

Melting point/range-77 °C (Pour point)Boiling point/range236 °C @ 1013 hPaFlash point117 °C @ 1013 hPa***

Method ISO 2719

Evaporation rate No data available

Flammability (solid, gas) Does not apply, the substance is a liquid

Lower explosion limit 1,2 Vol %

Upper explosion limit No data available

Vapour pressure

Values [hPa] 0,0046	Values [kPa] 0,00046	Values [atm] < 0,001	@ °C 20	@ °F 68	Method OECD
,	•	•			104***
4,5	0,45	0,004	50	122	OECD
					104***

Vapour density No data available

Relative density

 Values
 @ °C
 @ °F
 Method

 0,900
 20
 68
 DIN 51757

 0,876
 50
 122
 DIN 51757

 Solubility
 0,7 g/l @ 20 °C, in water, OECD 105

log Pow 3,2 @ 25 °C (77 °F), measured, OECD 117***

Autoignition temperature 415 °C @ 1009 hPa***

Method
Decomposition temperature
Viscosity
Method
DIN 51794
No data available
11,47 mPa*s @ 20 °C
DIN 51562, dynamic

Oxidizing properties Does not apply, substance is not oxidising. There are no chemical groups

associated with oxidizing properties

Explosive propertiesDoes not apply, substance is not explosive. There are no chemical groups

associated with explosive properties

9.2. Other information

Molecular weight158,23Molecular formulaC9 H18 O2log Koc2,79 @ pH 4,5

1,90 @ pH 8 calculated***

Dissociation constant pKa 4,8 @ 20 °C (68 °F) OECD 112***

Refractive index 1,429 @ 20 °C

Surface tension 35,3 mN/m (0,63 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.



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10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

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

bases, amines.

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						
3,5,5-Trimethylhexanoic acid (3302-10-1)						
Routes of Exposure	Endpoint	Values	Species	Method		
Oral	LD50	1160 mg/kg	rat, male/female	OECD 401		
Dermal	LD50	> 2000 mg/kg	rat, male/female			
Inhalative***	LC0***	0,03 mg/l (7 h)***	rat, male/female***	OECD 403***		

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

Assessment

The available data lead to the classification given in section 2***

Irritation and corrosion						
3,5,5-Trimethylhexanoic acid (3302-10-1)						
Target Organ Effects	Species	Result	Method			
Skin	rabbit	irritating	OECD 404	4h in vivo***		
Eyes	rabbit	severe irritation	OECD 405	72h in vivo***		
Respiratory tract***	mouse***	RD50: 420 mg/m ^{3***}		in vivo***		

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

Assessment

The available data lead to the classification given in section 2***

Sensitization					
3,5,5-Trimethylhexanoi	c acid (3302-10-1)				
Target Organ Effects	Species	Evaluation	Method		
Skin	guinea pig	not sensitizing	OECD 406		



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3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

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					
3,5,5-Trimethylhexanoic acid (3302-10-1)					
Type	Dose	Species	Method		
Subacute toxicity	NOAEL: 10 mg/kg/d***	rat, male***	OECD 422***	Oral	
Subchronic toxicity***	NOAEL: 5 mg/kg/d (90d)***	rat, male/female***	OECD 408***	Oral***	

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

Assessment

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

STOT RE

Carcinogenicity, Muta	genicity, Reprodu	uctive toxicity			
3,5,5-Trimethylhexano	oic acid (3302-10-	1)			
Туре	Dose	Species	Evaluation	Method	
Mutagenicity		Salmonella	negative	OECD 471	In vitro study
		typhimurium		(Ames)	
Mutagenicity		Escherichia coli	negative	OECD 472	In vitro study
Mutagenicity		human	negative***	OECD 473	In vitro study
		lymphocytes***		(Chromosomal	
				Aberration)	
Mutagenicity		V79 cells,	negative	OECD 476	In vitro study
		Chinese hamster		(Mammalian	
				Gene Mutation)	
Reproductive toxicity	LOAEL 165 - 500			OECD 415	Oral
		female			
Reproductive toxicity	NOAEL 79 - 228			OECD 415	Oral
	J. J	female			
Reproductive toxicity***	NOAEL 10 - 30	rat, parental		OECD 422***	Oral***
		male/female***			<u> </u>
Reproductive toxicity***		rat, 1.		OECD 422***	Oral***
		Generation,			
		male/female***		0505 440***	0 1444
Reproductive toxicity***		rat, parental		OECD 443***	Oral***
	mg/kg/d***	male/female***		0500 440***	0 1444
Reproductive toxicity***	NOAEL 25	rat, 1.		OECD 443***	Oral***
		Generation,			
Davidania atal		male/female***		OFOD 44.4	Matawaltaniaitu
Developmental		rat***		OECD 414, Oral***	Maternal toxicity
Toxicity***	mg/kg/d***			Orai	Developmental toxicity***
Developmental	NOAEL 250	rabbit***		OECD 414,	Maternal toxicity
Toxicity***	mg/kg/d***			Oral***	Developmental
					toxicity***

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1



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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

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

Main symptoms

cough, headache, nausea, shortness of breath.

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							
3,5,5-Trimethylhexanoic acid (3,5,5-Trimethylhexanoic acid (3302-10-1)						
Species	Exposure time	Dose	Method				
Oncorhynchus mykiss (rainbow trout)	96h	LC50: 122 mg/l	OECD 203				
Activated sludge (bacteriae)	3 h	EC50: 470 mg/l	OECD 209				
Daphnia magna (Water flea)	48h	EC50: 68 mg/l	OECD 202				
Pseudokirchneriella subcapitata	72h	EC50: 81 mg/l (Growth rate)	OECD 201				
Pseudokirchneriella subcapitata	72h	EC50: 51 mg/l (Biomass)	OECD 201				

Long term toxicity					
3,5,5-Trimethylhexanoic acid (3302-10-1)					
Туре	Species	Dose	Method		
Aquatic toxicity	Pseudokirchneriella subcapitata	NOEC: 10 mg/l (3d)***	OECD 201		

12.2. Persistence and degradability

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

Biodegradation

96 % (21 d), activated sludge, domestic, non-adapted, aerobic, OECD 301A.***

Abiotic Degradation				
3,5,5-Trimethylhexanoic acid (3302-10-1)				
Туре	Result	Method	•	
Hydrolysis	not expected***			



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Photolysis	Half-life (DT50): 60,17 h***	calculated

12.3. Bioaccumulative potential

3,5,5-Trimethylhexanoic acid (3302-10-1)			
Туре	Result	Method	
log Pow	3,2 @ 25 °C (77 °F)***	measured, OECD 117	
	4,1 - 7 @ 0,1 mg/l	OECD 305 C	
BCF	0,5 - 1,7 @ 1 mg/l	OECD 305 C	

12.4. Mobility in soil

3,5,5-Trimethylhexanoic acid (3302-10-1)		
Туре	Result	Method
Surface tension	35,3 mN/m (0,63 g/l @ 20°C (68°F))	OECD 115
Distribution to environmental compartments	Air: 1,99 Soil: 12,6 Water: 72,6 Sediment: 12,7 Suspended sediment: 0,08 Biota: 0,01***	calculated
Adsorption/Desorption	log Koc: 2,79 @ pH 4,5	calculated
Adsorption/Desorption	log Koc: 1,90 @ pH 8	calculated

12.5. Results of PBT and vPvB assessment

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

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

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

No data available

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



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Section 14.1 - 14.6

Not restricted ICAO-TI / IATA-DGR

Not restricted **IMDG**

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

Product name Nonanoic acid

Ship type Pollution category

ADR/RID Not restricted

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)

not subject Category

DI 1999/13/EC (VOC Guideline)

Component	Status
3,5,5-Trimethylhexanoic acid***	not subject
CAS: 3302-10-1	

International Inventories

3,5,5-Trimethylhexanoic acid***, CAS: 3302-10-1

AICS (AU) DSL (CA) IECSC (CN) EC-No. 2219750 (EU)

ENCS (2)-608 (JP)

ISHL (2)-608 (JP)

KECI KE-34559 (KR)

PICCS (PH)

TSCA (US)

NZIoC-NZ with note***

TCSI (TW)



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SECTION 16: Other information

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

H302: Harmful if swallowed. H315: Causes skin irritation.

H318: Causes serious eye damage.

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

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).

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End of Safety Data Sheet