

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

PIPERAZINE 68% (PIP-68)

Version 3

Revision Date 08.03.2021

Print Date 09.03.2022

GB / EN

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name : PIPERAZINE 68% (PIP-68)

UFI : EKM1-90A7-800S-FASN

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

Use of the Substance/Mixture : Specific use(s): Refer to attached exposure scenario Annex.

1.3 Details of the supplier of the safety data sheet

Company : Nouryon
Functional Chemicals AB
SE 444 85 Stenungsund
Sweden

Telephone : +4630385000
Telefax : +46303770551
E-mail address : QTS@nouryon.com

1.4 Emergency telephone number

Emergency telephone number : 24 hours emergency response number: +31 57 06 79211
Kemiakuten-SE: 020 99 60 00-:
Nouryon Emergency Response Centre: +31 570 679211
Poison Centre: 0845 46 47 (England/Wales) / 08454 24 24 24 (Scotland)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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Skin corrosion, 1B, H314
Serious eye damage, 1, H318
Respiratory sensitisation, 1B, H334
Skin sensitisation, 1B, H317
Reproductive toxicity, 2, H361

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Pictogram



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361 Suspected of damaging fertility or the unborn child.

Precautionary statements : **Prevention:**
P260 Do not breathe dust or mist.
P261 Avoid breathing dust or fume.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label:

Piperazine

110-85-0

2.3 Other hazards

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No further data available.

PBT and vPvB assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Pure substance/mixture : Mixture

Hazardous substance

Chemical name	PBT vPvB OEL	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
Piperazine		110-85-0 203-808-3 01-2119480384-35	Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1B; H334 Skin Sens. 1B; H317 Repr. 2; H361	>= 60 - < 70

For the full text of the H-Statements mentioned in this Section, see Section 16.

Non-hazardous substance

Chemical name	CAS-No.	Concentration [%]
Water	7732-18-5	20 - 40

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

- General advice : Immediate medical attention is required.
Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
- If inhaled : Consult a physician after significant exposure.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If skin irritation persists, call a physician.
- In case of eye contact : Rinse with plenty of water.
Get medical attention immediately. Continue to rinse during transport.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
Do not induce vomiting! May cause chemical burns in mouth and throat.

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4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.
- Risks : May cause an allergic skin reaction.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Suspected of damaging fertility or the unborn child.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting / Specific hazards arising from the chemical : Do not allow run-off from fire fighting to enter drains or water courses.
- Combustion products : Carbon oxides
Nitrogen oxides (NOx)

5.3 Advice for firefighters

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Use personal protective equipment.
Wear respiratory protection.
Ensure adequate ventilation.
- Emergency measures on accidental release : Evacuate personnel to safe areas.
Only qualified personnel equipped with suitable protective equipment may intervene.
Prevent unauthorised persons entering the zone.

6.2 Environmental precautions

- Environmental precautions : Do not flush into surface water or sanitary sewer system.

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Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up / : Pick up and arrange disposal without creating dust.
Methods for containment : Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal considerations see section 13.
For personal protection see section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling : Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

: For personal protection see section 8.
Avoid formation of respirable particles.
Do not breathe vapours/dust.
Avoid contact with skin.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Prevent unauthorized access.
Keep container tightly closed in a dry and well-ventilated place.
Reacts with copper, aluminium, zinc and their alloys.

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Refer to attached exposure scenario Annex.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Piperazine	110-85-0	TWA	0.1 mg/m ³	2000/39/EC
	Further information: Indicative			
		STEL	0.3 mg/m ³	2000/39/EC
	Further information: Indicative			

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	TWA	0.1 mg/m ³	GB EH40
Further information: Capable of causing occupational asthma.			
	STEL	0.3 mg/m ³	GB EH40
Further information: Capable of causing occupational asthma.			
	TWA (Inhalable fraction and vapor)	0.03 ppm (piperazine)	ACGIH

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Piperazine	Workers	Inhalation	Long-term systemic effects	0.1 mg/m ³
	Workers	Inhalation	Acute systemic effects	0.3 mg/m ³
	Workers	Inhalation	Long-term local effects	0.1 mg/m ³
	Workers	Inhalation	Acute local effects	0.3 mg/m ³
	Workers	Dermal	Long-term systemic effects	0.014 mg/kg bw/day
	Workers	Dermal	Acute systemic effects	0.042 mg/kg bw/day
	Workers	Dermal	Acute local effects	2 %
	Consumers	Ingestion	Long-term systemic effects	1.5 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Piperazine	Fresh water	1.25 mg/l
	Marine water	0.125 mg/l
	Fresh water sediment	4.5 mg/kg dry weight (d.w.)
	Marine sediment	0.45 mg/kg dry weight (d.w.)
	Soil	11.5 mg/kg dry weight (d.w.)
	Sewage treatment plant	54 mg/l
	Intermittent water	1.25 mg/l
	Secondary Poisoning	4.6 mg/kg food

8.2 Exposure controls

Engineering measures

Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye protection : Safety glasses with side-shields conforming to EN166

Hand protection

Material : butyl-rubber
Break through time : > 30 min
Glove thickness : \geq 0.2 mm
Directive : Protective gloves complying with EN 374.
Wearing time : < 30 min
Remarks : Wearing time < 30 minutes

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Material : butyl-rubber
Break through time : > 240 min
Glove thickness : >= 0.6 mm
Directive : Protective gloves complying with EN 374.
Wearing time : < 240 min
Remarks : Wearing time< 240 minutes

Material : butyl-rubber
Break through time : > 480 min
Glove thickness : >= 0.8 mm
Directive : Protective gloves complying with EN 374.
Wearing time : < 480 min
Remarks : Wearing time< 480 minutes

Remarks : The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove.

Skin and body protection : Protective suit

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
Wear full face mask supplied with:
Gas cartridge K (ammonia, green).
Suitable mask with particle filter P3 (European Norm 143)

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.
Wash contaminated clothing before re-use.

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.
Discharge into the environment must be avoided.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state : Solid (20°C)
Colour : white
Odour : amine-like
Odour Threshold : No data available
Melting point/range : 35 - 45 °C
Boiling point/boiling range : 110 °C

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Flammability (solid, gas) : Not classified as a flammability hazard

Upper explosion limit / Upper flammability limit : 12 %(V)

Lower explosion limit / Lower flammability limit : 4 %(V)

Flash point : 85.5 °C
Method: Pensky-Martens closed cup molten

Auto-ignition temperature : > 150 °C

Decomposition temperature
Decomposition temperature : No data available

pH : 10 - 12
Concentration: 15 %

Viscosity
Viscosity, dynamic : 15 mPa.s (50 °C)

Viscosity, kinematic : Not applicable

Solubility(ies)
Water solubility : 150 g/l (20 °C)

Solubility in other solvents : Soluble in ethanol and acetone.

Partition coefficient: n-octanol/water : No data available

Vapour pressure : 2.6 hPa (20 °C)

Relative density : 1.020 (50 °C)

Density : 1.02 g/cm³ (50 °C)

Relative vapour density : 3.0

9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Flammability (liquids) : Not classified as a flammability hazard

Evaporation rate : No data available

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This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Heating can release hazardous gases.

10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid : Reacts with copper, aluminium, zinc and their alloys.
Strong acids and oxidizing agents
Halogenated compounds

10.6 Hazardous decomposition products

Hazardous decomposition products : Nitrogen oxides (NO_x)

Thermal decomposition : No data available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Product information:

Acute toxicity : Not classified based on available information.

Skin corrosion/irritation : Causes severe burns.

Serious eye damage/eye irritation : Causes serious eye damage.

Respiratory or skin sensitisation : Respiratory sensitisation: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation: May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified based on available information.

Carcinogenicity : Not classified based on available information.

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

STOT - single exposure : Not classified based on available information.

STOT - repeated exposure : Not classified based on available information.

Aspiration hazard : Not classified based on available information.

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Further information : Suspected of damaging fertility or the unborn child.

Test result

Acute oral toxicity : LD50: > 2,000 - 5,000 mg/kg
Species: Rat

Respiratory or skin sensitisation : Result: The product is a skin sensitiser, sub-category 1B.
Result: The product is a respiratory sensitiser, sub-category 1B.

Toxicology data for the components:

Piperazine

Acute toxicity:

Acute oral toxicity : LD50: ca. 2,600 mg/kg
Species: Rat
Method: OECD Test Guideline 401
Information taken from reference works and the literature.

Acute inhalation toxicity : Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD50: > 5,000 mg/kg
Species: Rabbit
Method: OECD Test Guideline 402
Information taken from reference works and the literature.

Skin corrosion/irritation : Result: Causes burns.

Serious eye damage/eye irritation : Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation : Maximisation Test
Species: Guinea pig
Result: The product is a skin sensitiser, sub-category 1B.
Method: OECD Test Guideline 406
Information taken from reference works and the literature.
Result: The product is a respiratory sensitiser, sub-category 1B.

Germ cell mutagenicity

Genotoxicity in vitro : Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471
Information taken from reference works and the literature.

Genotoxicity in vivo : In vivo micronucleus test
Species: Mouse
Result: negative
Information taken from reference works and the literature.

Carcinogenicity : No data available

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CMR effects Reproductive toxicity	: Suspected human reproductive toxicant
STOT - single exposure	: Not classified due to data which are conclusive although insufficient for classification.
STOT - repeated exposure	: Not classified due to data which are conclusive although insufficient for classification.
Aspiration hazard	: No data available

11.2 Information on other hazards

No data available

SECTION 12: ECOLOGICAL INFORMATION

Product information: Ecotoxicology Assessment

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

12.1 Toxicity

Components:

Test result

Piperazine

Toxicity to fish	: LC50: > 1,800 mg/l Exposure time: 96 h Species: Poecilia reticulata (guppy) Information taken from reference works and the literature.
Toxicity to daphnia and other aquatic invertebrates	: EC50: 21 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Information taken from reference works and the literature.
Toxicity to algae	: NOEC: > 1,000 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Method: OECD Test Guideline 201 Information taken from reference works and the literature.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 25 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211 Information taken from reference works and the literature.

12.2 Persistence and degradability

Product information:

Biodegradability : Result: Readily biodegradable.

Components:

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Piperazine

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301F

12.3 Bioaccumulative potential

Product information:

Bioaccumulation : Bioaccumulation is unlikely.

Components:

Piperazine

Bioaccumulation : Bioaccumulation is unlikely.

12.4 Mobility in soil

Product information:

Mobility : The product is miscible in water and readily biodegradable in both water and soil. Accumulation is not expected.

Components:

Piperazine

Mobility : The product is miscible in water and readily biodegradable in both water and soil. Accumulation is not expected.

12.5 Results of PBT and vPvB assessment

Product information:

PBT and vPvB assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

Piperazine

PBT and vPvB assessment : This substance is not considered to be a PBT (Persistent, Bioaccumulation, Toxic)
This substance is not considered to be vPvB (very Persistent nor very Bioaccumulating)

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Product information:

Biochemical Oxygen Demand (BOD) : No data available

Components:

Piperazine

Biochemical Oxygen Demand (BOD) : No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with

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chemical or used container.
Dispose of contents/container in accordance with local
regulation.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR : UN 2579
RID : UN 2579
IMDG-Code : UN 2579
IATA-DGR : UN 2579

14.2 Proper shipping name

ADR : PIPERAZINE
RID : PIPERAZINE
IMDG-Code : PIPERAZINE
IATA-DGR : Piperazine

14.3 Transport hazard class

ADR : 8
RID : 8
IMDG-Code : 8
IATA-DGR : 8

14.4 Packing group

ADR
Packing group : III
Classification Code : C8
Hazard Identification Number : 80
Labels : 8
Tunnel restriction code : (E)
RID
Packing group : III
Classification Code : C8
Hazard Identification Number : 80
Labels : 8
IMDG-Code
Packing group : III
Labels : 8
EmS Code : F-A, S-B

IATA-DGR
Packing instruction (cargo
aircraft) : 864
Packing instruction
(passenger aircraft) : 860
Packing instruction (LQ) : Y845
Packing group : III
Labels : 8

14.5 Environmental hazards

ADR
Environmentally hazardous : no

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RID

Environmentally hazardous : no

IMDG-Code

Marine pollutant : no

IATA-DGR

Environmentally hazardous : no

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

SECTION 15: REGULATORY INFORMATION

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : Not applicable

Notification status

TCSI : YES. On the inventory, or in compliance with the inventory
TSCA : YES. All substances listed as active on the TSCA inventory
AICS : YES. On the inventory, or in compliance with the inventory
DSL : YES. All components of this product are on the Canadian DSL
ENCS : YES. On the inventory, or in compliance with the inventory
ISHL : YES. On the inventory, or in compliance with the inventory
KECI : YES. On the inventory, or in compliance with the inventory
PICCS : YES. On the inventory, or in compliance with the inventory
IECSC : YES. On the inventory, or in compliance with the inventory
NZIoC : YES. On the inventory, or in compliance with the inventory

For explanation of abbreviation see section 16.

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15.2 Chemical safety assessment

Piperazine : A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION

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

H314 : Causes severe skin burns and eye damage.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361 : Suspected of damaging fertility or the unborn child.

Classification procedure:

Skin corrosion, 1B, H314, Calculation method
Serious eye damage, 1, H318, Calculation method
Respiratory sensitisation, 1B, H334, Based on product data or assessment
Skin sensitisation, 1B, H317, Based on product data or assessment
Reproductive toxicity, 2, H361, Calculation method

Full text of other abbreviations

2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits
2000/39/EC / TWA : Limit Value - eight hours
2000/39/EC / STEL : Short term exposure limit
ACGIH / TWA : 8-hour, time-weighted average
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect

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Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
