

SAFETY DATA SHEET



Date of issue/Date of revision : 12 August 2019 Version : 6

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

1.1 Product identifier

Product name : SIGMASHIELD 1090 HARDENER US

Product code : 00336383

Other means of identification

Not available.

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

Product use : Industrial applications, Used by spraying.

Use of the substance/mixture : Coating.

1.3 Details of the supplier of the safety data sheet

PPG Coatings SPRL/BVBA
Tweemontstraat 104
B-2100 Deurne
Belgium
Telephone +32-33606311
Fax +32-33606435

e-mail address of person responsible for this SDS : PMC.Safety@PPG.com

1.4 Emergency telephone number

Supplier

+31 20 4075210

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4, H302

Skin Corr. 1A, H314

Eye Dam. 1, H318

Skin Sens. 1, H317

Repr. 2, H361fd (Fertility and Unborn child)

STOT RE 2, H373

Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

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SECTION 2: Hazards identification

Hazard pictograms



Signal word

: Danger

Hazard statements

: Harmful if swallowed.
 Causes severe skin burns and eye damage.
 May cause an allergic skin reaction.
 Suspected of damaging fertility. Suspected of damaging the unborn child.
 May cause damage to organs through prolonged or repeated exposure.
 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

: Wear protective gloves. Wear protective clothing. Wear eye or face protection. Do not breathe vapour.

Response

: IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF SWALLOWED: Immediately call a POISON CENTER or physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

: Store locked up.

Disposal

: Not applicable.
 P280, P260, P304 + P340, P301 + P310, P303 + P361 + P353, P305 + P351 + P338, P405

Hazardous ingredients

: cyclohexylaminopropylamine
 2-piperazin-1-ylethylamine
 2,2'-iminodiethylamine

Supplemental label elements

: Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

: Not applicable.

Tactile warning of danger

: Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB

: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

: Causes severe digestive tract burns.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	% by weight	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
3-cyclohexylaminopropylamine	EC: 222-001-7 CAS: 3312-60-5	≥75 - ≤90	Acute Tox. 4, H302 Skin Corr. 1A, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412	[1]
2-piperazin-1-ylethylamine	REACH #: 01-2119471486-30 EC: 205-411-0 CAS: 140-31-8 Index: 612-105-00-4	≥5.0 - <10	Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Repr. 2, H361fd (Fertility and Unborn child) (oral) STOT RE 1, H372 (respiratory tract) (inhalation) Aquatic Chronic 3, H412	[1]
2,2'-iminodiethylamine	REACH #: 01-2119473793-27 EC: 203-865-4 CAS: 111-40-0 Index: 612-058-00-X	≤0.30	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

SUB codes represent substances without registered CAS Numbers.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

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SECTION 4: First aid measures

- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. May cause an allergic skin reaction.
- Ingestion** : Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain
 watering
 redness
- Inhalation** : Adverse symptoms may include the following:
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering may occur
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
 stomach pains
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

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SECTION 5: Firefighting measures

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products : Decomposition products may include the following materials:
 carbon oxides
 nitrogen oxides
 metal oxide/oxides

5.3 Advice for firefighters

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
 See Section 8 for information on appropriate personal protective equipment.
 See Section 13 for additional waste treatment information.

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SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

: Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

See Section 1.2 for Identified uses.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
2,2'-iminodiethylamine	EH40/2005 WELs (United Kingdom (UK), 8/2018). Absorbed through skin. TWA: 4.3 mg/m ³ 8 hours. TWA: 1 ppm 8 hours.

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SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
2,2'-iminodiethylamine	DNEL	Long term Oral	0.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.9 mg/m ³	General population	Systemic
	DNEL	Short term Oral	1.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	1.7 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	3.3 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	3.6 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	5.3 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	10 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	20 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	21.4 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	1.1 mg/cm ²	Workers	Local
	DNEL	Long term Inhalation	0.87 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	2.6 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	4.6 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	4.88 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	4.88 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	11.4 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	15.4 mg/m ³	Workers	Systemic
DNEL	Short term Inhalation	27.5 mg/m ³	General population	Systemic	
DNEL	Short term Inhalation	92.1 mg/m ³	Workers	Systemic	

PNECs

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
2,2'-iminodiethylamine	-	Fresh water	0.56 mg/l	Assessment Factors
	-	Marine water	0.056 mg/l	Assessment Factors
	-	Sewage Treatment Plant	6 mg/l	Assessment Factors
	-	Fresh water sediment	1072 mg/kg dwt	Equilibrium Partitioning
	-	Marine water sediment	107.2 mg/kg dwt	Equilibrium Partitioning
	-	Soil	7.97 mg/kg dwt	-

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SECTION 8: Exposure controls/personal protection

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles and face shield. Use eye protection according to EN 166.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Gloves : nitrile neoprene

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Wear a respirator conforming to EN140. Filter type: organic vapour (Type A) and particulate filter P3

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Liquid.
Colour	: Not available.
Odour	: Characteristic.
Odour threshold	: Not available.
pH	: insoluble in water.
Melting point/freezing point	: May start to solidify at the following temperature: -19°C (-2.2°F) This is based on data for the following ingredient: 2-piperazin-1-ylethylamine.
Initial boiling point and boiling range	: >37.78°C
Flash point	: Closed cup: 87.78°C
Evaporation rate	: 0.007 (2-piperazin-1-ylethylamine) compared with butyl acetate
Flammability (solid, gas)	: liquid
Upper/lower flammability or explosive limits	: Greatest known range: Lower: 1.1% Upper: 9.4% (2-piperazin-1-ylethylamine)
Vapour pressure	: Highest known value: <0.01 kPa (<0.08 mm Hg) (at 20°C) (3-cyclohexylaminopropylamine). Weighted average: 0.009 kPa (0.07 mm Hg) (at 20°C)
Vapour density	: Highest known value: 4.4 (Air = 1) (2-piperazin-1-ylethylamine).
Relative density	: 0.95
Solubility(ies)	: Insoluble in the following materials: cold water.
Water Solubility at room temperature	: 85.6 g/l
Partition coefficient: n-octanol/ water	: Not applicable.
Auto-ignition temperature	: Lowest known value: >300°C (>572°F) (2-piperazin-1-ylethylamine).
Decomposition temperature	: Stable under recommended storage and handling conditions (see Section 7).
Viscosity	: Kinematic (40°C): >0.21 cm ² /s
Explosive properties	: The product itself is not explosive, but the formation of an explosible mixture of vapour or dust with air is possible.
Oxidising properties	: Product does not present an oxidizing hazard.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

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SECTION 10: Stability and reactivity

10.5 Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.

10.6 Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides metal oxide/oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
3-cyclohexylaminopropylamine 2-piperazin-1-ylethylamine	LD50 Oral	Rat	1500 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
2,2'-iminodiethylamine	LD50 Dermal	Rabbit	866 mg/kg	-
	LD50 Oral	Rat	2140 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	0.07 to 0.3 mg/l	4 hours
	LD50 Dermal	Rabbit	1090 mg/kg	-
	LD50 Oral	Rat	1080 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Acute toxicity estimates

Route	ATE value
Oral	1325.78 mg/kg
Dermal	9332.58 mg/kg
Inhalation (dusts and mists)	26.06 mg/l

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
2-piperazin-1-ylethylamine	skin	Guinea pig	Sensitising

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
3-cyclohexylaminopropylamine	-	Subject: Bacteria	Negative

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

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SECTION 11: Toxicological information

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2,2'-iminodiethylamine	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2-piperazin-1-ylethylamine	Category 1	Inhalation	respiratory tract

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed.
- Skin contact** : Causes severe burns. May cause an allergic skin reaction.
- Eye contact** : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : Adverse symptoms may include the following:
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
 stomach pains
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering may occur
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Eye contact** : Adverse symptoms may include the following:
 pain
 watering
 redness

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

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SECTION 11: Toxicological information**Potential delayed effects** : Not available.**Potential chronic health effects**

Not available.

Conclusion/Summary : Not available.**General** : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.**Carcinogenicity** : No known significant effects or critical hazards.**Mutagenicity** : No known significant effects or critical hazards.**Teratogenicity** : Suspected of damaging the unborn child.**Developmental effects** : No known significant effects or critical hazards.**Fertility effects** : Suspected of damaging fertility.**Other information** : Not available. There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains 3-cyclohexylaminopropylamine, 2-piperazin-1-ylethylamine, 2,2'-iminodiethylamine. May produce an allergic reaction.

SECTION 12: Ecological information**12.1 Toxicity**

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> 3-cyclohexylaminopropylamine	LC50 46 to 68 mg/l	Fish	96 hours
<input checked="" type="checkbox"/> 2-piperazin-1-ylethylamine	Acute EC50 58 mg/l	Daphnia	48 hours

Conclusion/Summary : There are no data available on the mixture itself.**12.2 Persistence and degradability**

Product/ingredient name	Test	Result	Dose	Inoculum
<input checked="" type="checkbox"/> 2-piperazin-1-ylethylamine	OECD 301F	0 % - Not readily - 28 days	-	-

Conclusion/Summary : There are no data available on the mixture itself.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<input checked="" type="checkbox"/> 2-piperazin-1-ylethylamine	-	-	Not readily

12.3 Bioaccumulative potential

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SECTION 12: Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
2,2'-iminodiethylamine	-1.3	4.47	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

European waste catalogue (EWC)

Waste code	Waste designation
08 01 99	wastes not otherwise specified

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Type of packaging	European waste catalogue (EWC)
Container	15 01 06 mixed packaging

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

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14. Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.	Not applicable.

Additional information

ADR/RID : None identified.
 ADN : None identified.
 IMDG : None identified.
 IATA : None identified.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not applicable.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Ozone depleting substances (1005/2009/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

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SECTION 15: Regulatory information

15.2 Chemical safety assessment : No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 PBT = Persistent, Bioaccumulative and Toxic
 vPvB = Very Persistent and Very Bioaccumulative
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
 IMDG = International Maritime Dangerous Goods
 IATA = International Air Transport Association

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
✔ Acute Tox. 4, H302	Calculation method
Skin Corr. 1A, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 2, H361fd (Fertility and Unborn child)	Calculation method
STOT RE 2, H373	Calculation method
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements

✔ H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H361fd (oral)	Suspected of damaging fertility if swallowed. Suspected of damaging the unborn child if swallowed.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372 (inhalation)	Causes damage to organs through prolonged or repeated exposure if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

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SECTION 16: Other information

Acute Tox. 2, H330 Acute Tox. 3, H311 Acute Tox. 4, H302 Acute Tox. 4, H312 Aquatic Chronic 3, H412 Eye Dam. 1, H318 Repr. 2, H361fd (oral) Repr. 2, H361fd Skin Corr. 1A, H314 Skin Corr. 1B, H314 Skin Sens. 1, H317 Skin Sens. 1B, H317 STOT RE 1, H372 (inhalation) STOT RE 2, H373 STOT SE 3, H335	ACUTE TOXICITY (inhalation) - Category 2 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 REPRODUCTIVE TOXICITY (Fertility and Unborn child) (oral) - Category 2 REPRODUCTIVE TOXICITY (Fertility and Unborn child) - Category 2 SKIN CORROSION/IRRITATION - Category 1A SKIN CORROSION/IRRITATION - Category 1B SKIN SENSITISATION - Category 1 SKIN SENSITISATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (inhalation) - Category 1 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
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History

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Date of previous issue : 21 December 2018
Prepared by : EHS
Version : 6

Disclaimer

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