

Safety Data Sheet

ULTRABOND G-21 PART A

Safety Data Sheet dated: 5/16/2017 - version 1

Date of first edition: 5/16/2017

1. Identification

Product identifier

Mixture identification:

Trade name: ULTRABOND G-21 PART A

Recommended use and restrictions on use

Recommended use: Epoxy resins

Restrictions on use: N.A.

Supplier's details

Company: MAPEI INC. (Canada)

2900 Francis-Hughes Avenue

H7L 3J5 - Laval - QC - CAN

Phone: 1-450-662-1212

Emergency phone number

(USA) CHEMTREC 1-800-424-9300

(Canada) CANUTEC 1-613-996-6666

2. Hazard identification



Classification of the product

Skin Sens. 1A	May cause an allergic skin reaction.
Muta. 2	Suspected of causing genetic defects if inhaled, in contact with skin and if swallowed.
Repr. 2	Suspected of damaging fertility. Suspected of damaging the unborn child.
Aquatic Acute 3	Harmful to aquatic life.
Aquatic Chronic 3	Harmful to aquatic life with long lasting effects.
Skin Irrit. 2	Causes skin irritation.
Eye Irrit. 2A	Causes serious eye irritation.

Label elements

Pictograms and Signal Words



Warning

Hazard statements:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H341.G	Suspected of causing genetic defects if inhaled, in contact with skin and if swallowed.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements:

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261.A	Avoid breathing dust or mist.
P264.2	Wash skin thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352.A	IF ON SKIN: Wash with plenty of 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.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P321.A	Specific treatment (see supplementary instructions on this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P501.A	Dispose of contents/container in accordance with applicable regulations.

Other hazards

None

Ingredient(s) with unknown acute toxicity

None

This product contains crystalline silica (quartz sand). IARC has classified crystalline silica as a Group 1 carcinogen. Both IARC and NTP consider silica as a known human carcinogen. Evidence is based on the chronic and long-term exposure workers have had to respirable sized crystalline silica dust particles. Because this product is in liquid or paste form, it does not pose a dust hazard; therefore, this classification is not relevant. (Note: sanding of the hardened product may create a silica dust hazard)

3. Composition/information on ingredients

Substances

N.A.

Mixtures

Hazardous components within the meaning of WHMIS 2015 and related classification:

List of components

Quantity	Name	Ident. Numb.	Classification
5-10 %	Bisphenol A epoxy resin	CAS:25085-99-8	Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Aquatic Chronic 2, H411; Skin Sens. 1B, H317
1-2.5 %	o-Cresylglycidyl ether	CAS:2210-79-9	Skin Irrit. 2, H315; Skin Sens. 1A, H317; Muta. 2, H341
0.49-1 %	Nonylphenol	CAS:25154-52-3	Repr. 2, H361; Skin Corr. 1B, H314; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302
0.49-1 %	Silica Sand	CAS:14808-60-7	STOT RE 1, H372; Carc. 1A, H350

4. First-aid measures

Description of necessary first-aid measures

In case of skin contact:

- Immediately take off all contaminated clothing.
- Remove contaminated clothing immediately and dispose of safely.
- After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

- After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
- Protect uninjured eye.

In case of Ingestion:

- Do not induce vomiting, get medical attention showing the SDS and the hazard label.

In case of Inhalation:

- Remove casualty to fresh air and keep warm and at rest.

Most important symptoms/effects, acute and delayed

- Eye irritation
- Eye damages
- Skin Irritation
- Erythema

Indication of immediate medical attention and special treatment needed, if necessary

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

5. Fire-fighting measures

Suitable and unsuitable extinguishing media

Suitable extinguishing media:

- Water.
- Carbon dioxide (CO2).

Unsuitable extinguishing media:

None in particular.

Specific hazards arising from the hazardous product

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

Hazardous combustion products: N.A.

Explosive properties: N.A.

Oxidizing properties: N.A.

Special protective equipment and precautions for fire-fighters

Use suitable breathing apparatus.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Wash with plenty of water.

7. Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Exercise the greatest care when handling or opening the container.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Conditions for safe storage, including any incompatibilities

Storage temperature: N.A.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

8. Exposure controls/personal protection

Control parameters

List of components with OEL value

Component	OEL Type	Country	Ceiling	Long Term mg/m ³	Long Term ppm	Short Term mg/m ³	Short Term ppm	Behaviour	Note
Silica Sand	ACGIH			0,025					A2 - Suspected Human Carcinogen;lung cancer;pulmonary fibrosis;

Appropriate engineering controls

N.A.

Individual protection measures, such as personal protective equipment (PPE)

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

N.A.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state: Liquid

Appearance and colour: Paste beige

Odour: Slightly latex like
Odour threshold: N.A.
pH: N.A.
Melting point / freezing point: N.A.
Initial boiling point and boiling range: N.A.
Flash point: >100 °C (212 °F) Notes: Closed Cup Method (Closed Cup)
Evaporation rate: <1.0
Upper/lower flammability or explosive limits: N.A.
Vapour density: >1.0
Vapour pressure: >1.0
Relative density: N.A.
Solubility in water: Insoluble
Solubility in oil: N.A.
Partition coefficient (n-octanol/water): N.A.
Auto-ignition temperature: N.A.
Decomposition temperature: N.A.
Viscosity: N.A.
Explosive properties: N.A.
Oxidizing properties: N.A.
Solid/gas flammability: N.A.

Other information

Substance groups relevant properties: N.A.
Miscibility: N.A.
Fat Solubility: N.A.
Conductivity: N.A.

10. Stability and reactivity

Reactivity

Stable under normal conditions

Chemical stability

Data not Available.

Possibility of hazardous reactions

None.

Conditions to avoid

Stable under normal conditions.

Incompatible materials

None in particular.

Hazardous decomposition products

None.

11. Toxicological information

Information on toxicological effects

Toxicological information of the mixture:

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

Toxicological information on main components of the mixture:

o-Cresylglycidyl ether	a) acute toxicity	LC50 Inhalation Rat = 6090 mg/m ³ 4h
Nonylphenol	a) acute toxicity	LD50 Skin Rabbit = 2031 mg/kg LD50 Oral Rat = 580 mg/kg
Silica Sand	a) acute toxicity	LD50 Oral Rat = 500 mg/kg

If not differently specified, the information required in the regulation and listed below must be considered as N.A.

- a) acute toxicity
- b) skin corrosion/irritation
- c) serious eye damage/irritation
- d) respiratory or skin sensitisation
- e) germ cell mutagenicity

- f) carcinogenicity
- g) reproductive toxicity
- h) STOT-single exposure
- i) STOT-repeated exposure
- j) aspiration hazard

Substance(s) listed on the IARC Monographs:

Silica Sand Group 1

Substance(s) listed as OSHA Carcinogen(s):

Silica Sand

Substance(s) listed as NIOSH Carcinogen(s):

Silica Sand

Substance(s) listed on the NTP report on Carcinogens:

Silica Sand

12. Ecological information

Ecotoxicity

Adopt good working practices, so that the product is not released into the environment.

List of components with eco-toxicological properties

Quantity	Component	Ident. Numb.	Ecotox Infos
0.49-1 %	Nonylphenol	CAS: 25154-52-3	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 135 mg/L 96h a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 14 mg/L 48h IUCLID a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 41 mg/L 96h IUCLID a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 13 mg/L 72h IUCLID
0.49-1 %	Silica Sand	CAS: 14808-60-7	a) Aquatic acute toxicity : LC50 carp > 10000,00000 mg/L 72h

Persistence and degradability

N.A.

Bioaccumulative potential

N.A.

Mobility in soil

N.A.

Other adverse effects

N.A.

13. Disposal considerations

Safe handling and methods for disposal

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

14. Transport information

UN number

- TDG-UN number: N/A
- ADR-UN number: N/A
- DOT-UN Number: N/A
- IATA-Un number: N/A
- IMDG-Un number: N/A

UN proper shipping name

- TDG-Shipping Name: N/A
- ADR-Shipping Name: N/A
- DOT-Proper Shipping Name: N/A
- IATA-Technical name: N/A
- IMDG-Technical name: N/A

Transport hazard class(es)

- TDG-Class: N/A
- ADR-Class: N/A
- DOT-Hazard Class: N/A
- IATA-Class: N/A

IMDG-Class: N/A

Packing group

TDG-Packing Group: N/A
ADR-Packing Group: N/A
DOT Packing Group: N/A
IATA-Packing group: N/A
IMDG-Packing group: N/A

Environmental hazards

Marine pollutant: No
Environmental Pollutant: N.A.

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

N.A.

Special precautions in connection with transport or conveyance

TDG:

TDG Special provisions: N/A

Department of Transportation (DOT):

DOT-Special Provision(s): N/A
DOT-Label(s): N/A
DOT-Symbol: N/A
DOT-Cargo Aircraft: N/A
DOT-Passenger Aircraft: N/A
DOT-Bulk: N/A
DOT-Non-Bulk: N/A

Road and Rail (ADR-RID):

ADR-Label: N/A
ADR-Hazard identification number: N/A
ADR-Transport category (Tunnel restriction code): N/A

Air (IATA):

IATA-Passenger Aircraft: N/A
IATA-Cargo Aircraft: N/A
IATA-Label: N/A
IATA-Subrisk: N/A
IATA-Erg: N/A
IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage Code: N/A
IMDG-Stowage Note: N/A
IMDG-Subrisk: N/A
IMDG-Special Provisions: N/A
IMDG-Page: N/A
IMDG-Label: N/A
IMDG-EMS: N/A
IMDG-MFAG: N/A

15. Regulatory information

Canada - Federal regulations

DSL - Domestic Substances List

DSL Inventory:

All the substances are listed in the DSL.

NDSL - Non Domestic Substances List

NDSL Inventory:

no substances listed

NPRI - National Pollutant Release Inventory

Substances listed in NPRI:

no substances listed

USA - Federal regulations

TSCA - Toxic Substances Control Act

TSCA inventory:

All the components are listed on the TSCA inventory

TSCA listed substances:

Bisphenol A epoxy resin	is listed in TSCA	Section 8b
o-Cresylglycidyl ether	is listed in TSCA	Section 8b, Section 8a - PAIR
Nonylphenol	is listed in TSCA	Section 8b, Section 8a - PAIR
Silica Sand	is listed in TSCA	Section 8b

SARA - Superfund Amendments and Reauthorization Act

Section 302 - Extremely Hazardous Substances:

no substances listed

Section 304 - Hazardous substances:

no substances listed

Section 313 - Toxic chemical list:

Nonylphenol

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

Substance(s) listed under CERCLA:

no substances listed

CAA - Clean Air Act

CAA listed substances:

Nonylphenol is listed in CAA Section 112(b) - HON

CWA - Clean Water Act

CWA listed substances:

no substances listed

USA - State specific regulations

California Proposition 65

Substance(s) listed under California Proposition 65:

Silica Sand Listed as carcinogen

Massachusetts Right to know

Substance(s) listed under Massachusetts Right to know:

Nonylphenol

Silica Sand

Pennsylvania Right to know

Substance(s) listed under Pennsylvania Right to know:

Nonylphenol

Silica Sand

New Jersey Right to know

Substance(s) listed under New Jersey Right to know:

Silica Sand

16. Other information

Code	Description
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects .
H341.G	Suspected of causing genetic defects if inhaled, in contact with skin and if swallowed.
H350	May cause cancer .
H361	Suspected of damaging fertility or the unborn child <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure .
H400	Very toxic to aquatic life.
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Safety Data Sheet dated: 5/16/2017 - version 1

Product code: 2111

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. The information herein is presented in good faith and believed to be accurate as of the effective date given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

This document was prepared by a competent person who has received appropriate training.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This SDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

IMDG: International Maritime Code for Dangerous Goods.

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO: International Civil Aviation Organization.

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

CLP: Classification, Labeling, Packaging.

EINECS: European Inventory of Existing Commercial Chemical Substances.

INCI: International Nomenclature of Cosmetic Ingredients.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

GefStoffVO: Ordinance on Hazardous Substances, Germany.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

DNEL: Derived No Effect Level.

PNEC: Predicted No Effect Concentration.

TLV: Threshold Limiting Value.

TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).

STEL: Short Term Exposure limit.

STOT: Specific Target Organ Toxicity.

WGK: German Water Hazard Class.

KSt: Explosion coefficient.

Safety Data Sheet

ULTRABOND G-21 PART B

Safety Data Sheet dated: 10/11/2017 - version 2

Date of first edition: 5/3/2017

1. Identification

Product identifier

Mixture identification:

Trade name: ULTRABOND G-21 PART B

Recommended use and restrictions on use

Recommended use: Hardener for epoxy products

Restrictions on use: N.A.

Supplier's details

Company: MAPEI INC. (Canada)

2900 Francis-Hughes Avenue

H7L 3J5 - Laval - QC - CAN

Phone: 1-450-662-1212

Emergency phone number

(USA) CHEMTREC 1-800-424-9300

(Canada) CANUTEC 1-613-996-6666

2. Hazard identification



Classification of the product

Acute Tox. 4	Harmful if swallowed.
Acute Tox. 4	Harmful in contact with skin.
Skin Corr. 1B	Causes severe skin burns and eye damage.
Eye Dam. 1	Causes serious eye damage.
Skin Sens. 1A	May cause an allergic skin reaction.
Muta. 2	Suspected of causing genetic defects if inhaled.
Repr. 1B	May damage fertility. May damage the unborn child.
STOT SE 2	May cause damage to organs if inhaled.
Aquatic Acute 1	Very toxic to aquatic life.
Aquatic Chronic 1	Very toxic to aquatic life with long lasting effects.

Label elements

Pictograms and Signal Words



Danger

Hazard statements:

H302	Harmful if swallowed.
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.
H341.A	Suspected of causing genetic defects if inhaled.
H360FD	May damage fertility. May damage the unborn child.
H371.A	May cause damage to organs if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260.1	Do not breathe mist/vapours/spray.
P264.2	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312.A	IF SWALLOWED: Call a POISON CENTER if you feel unwell.
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/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310.B	Immediately call a doctor.
P321.A	Specific treatment (see supplementary instructions on this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P405	Store locked up.
P501.A	Dispose of contents/container in accordance with applicable regulations.

Other hazards

None

Ingredient(s) with unknown acute toxicity

None

3. Composition/information on ingredients

Substances

N.A.

Mixtures

Hazardous components within the meaning of WHMIS 2015 and related classification:

List of components

Quantity	Name	Ident. Numb.	Classification
50-75 %	4-Nonylphenol, branched	CAS:84852-15-3 EC:284-325-5 Index:601-053-00-8	Repr. 2, H361; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Eye Dam. 1, H318; Muta. 2, H341; STOT SE 2, H371; Skin Corr. 1B, H314
10-20 %	Aminoethylpiperazine	CAS:140-31-8	Acute Tox. 3, H311; Eye Dam. 1, H318; Skin Corr. 1B, H314; Skin Sens. 1, H317; Repr. 1B, H360
10-20 %	Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine	CAS:68082-29-1	Skin Irrit. 2, H315; Skin Sens. 1, H317; Aquatic Chronic 2, H411; Eye Irrit. 2A, H319
5-10 %	BRANCHED 2-NONYLPHENOL	CAS:91672-41-2	Acute Tox. 4, H302; Eye Dam. 1, H318; Repr. 2, H361; Skin Corr. 1B, H314; US-HAE/A1, H400; US-HAE/C1, H410
2.5-5 %	2,4,6-Tri(dimethylaminomethyl)phenol	CAS:90-72-2	Skin Corr. 1B, H314; Skin Sens. 1A, H317; Aquatic Chronic 3, H412
0.1-0.25 %	Diethylene triamine	CAS:111-40-0	Acute Tox. 4, H312; Eye Dam. 1, H318; Repr. 2, H361; STOT SE 3, H335; Aquatic Chronic 3, H412; Acute Tox. 4, H302; Skin Corr. 1B, H314; Skin Sens. 1B, H317; Acute Tox. 2, H330

4. First-aid measures

Description of necessary first-aid measures

In case of skin contact:

- Immediately take off all contaminated clothing.
- OBTAIN IMMEDIATE MEDICAL ATTENTION.
- Remove contaminated clothing immediately and dispose of safely.
- After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

- After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
- Protect uninjured eye.

In case of Ingestion:

Give nothing to eat or drink.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show him packing or label.

Most important symptoms/effects, acute and delayed

Eye irritation

Eye damages

Skin Irritation

Erythema

Indication of immediate medical attention and special treatment needed, if necessary

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

5. Fire-fighting measures

Suitable and unsuitable extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Unsuitable extinguishing media:

None in particular.

Specific hazards arising from the hazardous product

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

Hazardous combustion products: N.A.

Explosive properties: N.A.

Oxidizing properties: N.A.

Special protective equipment and precautions for fire-fighters

Use suitable breathing apparatus.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Wash with plenty of water.

7. Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Exercise the greatest care when handling or opening the container.

Use localized ventilation system.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Conditions for safe storage, including any incompatibilities

Storage temperature: N.A.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

8. Exposure controls/personal protection

Control parameters

List of components with OEL value

Component	OEL Type	Country	Ceiling	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Behaviour	Note
Diethylene triamine	ACGIH				1				Skin - potential significant contribution to overall exposure by the cutaneous route; eye and upper respiratory tract irritation;

Appropriate engineering controls

N.A.

Individual protection measures, such as personal protective equipment (PPE)

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Use adequate protective respiratory equipment.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state: Liquid

Appearance and colour: Paste beige

Odour: characteristic

Odour threshold: N.A.

pH: N.A.

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.

Flash point: >100 °C (212 °F)

Evaporation rate: N.A.

Upper/lower flammability or explosive limits: N.A.

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: N.A.

Solubility in water: N.A.

Solubility in oil: N.A.

Partition coefficient (n-octanol/water): N.A.

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Viscosity: N.A.

Explosive properties: N.A.

Oxidizing properties: N.A.

Solid/gas flammability: N.A.

Other information

Substance groups relevant properties: N.A.

Miscibility: N.A.

Fat Solubility: N.A.

Conductivity: N.A.

10. Stability and reactivity

Reactivity

Stable under normal conditions

Chemical stability

Data not available.

Possibility of hazardous reactions

None.

Conditions to avoid

Stable under normal conditions.

Incompatible materials

None in particular.

Hazardous decomposition products

None.

11. Toxicological information

Information on toxicological effects

Toxicological information of the mixture:

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

Toxicological information on main components of the mixture:

4-Nonylphenol, branched	a) acute toxicity	LD50 Oral Rat 1300 mg/kg LD50 Skin Rabbit > 2000 mg/kg
Aminoethylpiperazine	a) acute toxicity	LD50 Skin Rabbit = 880 µL/kg LD50 Oral Rat = 2140 mg/kg LD50 Oral Rat = 2140 µL/kg
2,4,6-Tri(dimethylaminomethyl) phenol	a) acute toxicity	LD50 Skin Rat = 1280 mg/kg LD50 Oral Rat = 1000 mg/kg
Diethylene triamine	a) acute toxicity	LD50 Skin Rabbit = 672 mg/kg LD50 Oral Rat = 819 mg/kg

If not differently specified, the information required in the regulation and listed below must be considered as N.A.

- a) acute toxicity
- b) skin corrosion/irritation
- c) serious eye damage/irritation
- d) respiratory or skin sensitisation
- e) germ cell mutagenicity
- f) carcinogenicity
- g) reproductive toxicity
- h) STOT-single exposure
- i) STOT-repeated exposure
- j) aspiration hazard

Substance(s) listed on the IARC Monographs:

None

Substance(s) listed as OSHA Carcinogen(s):

None

Substance(s) listed as NIOSH Carcinogen(s):

None

Substance(s) listed on the NTP report on Carcinogens:

None

12. Ecological information

Ecotoxicity

Adopt good working practices, so that the product is not released into the environment.

List of components with eco-toxicological properties

Quantity	Component	Ident. Numb.	Ecotox Infos
50-75 %	4-Nonylphenol, branched	CAS: 84852-15-3 - EINECS: 284-325-5 - 67-548-EC: 601-053-00-8	LC50 Fish Pimephales promelas 0,135 mg/L 96h „Holcombe, G.W., Phipps, G.L., Knuth, M.L. and Felhaber, T. (1984) Environ. Pollut. (Series A) 35, 367-381 LC100 Fish Leuciscus idus 1,1 mg/L 48h „Huels study, 1988 (unpublished) LC50 Fish Leuciscus idus 0,95 mg/L 48h „Huels study, 1988 (unpublished) LOEC Fish Pimephales promelas 14 µg/L 33d „Chemical Manufacturers Association (1991) Two environmental effects 4-Nonylphenol final reports 1. Chronic toxicity of Nonylphenol to the Mysid, Mysidopsis bahia: EnviroSystems Study Number 8977-CMA 2. Early life stage toxicity of Nonylphenol to the fath

NOEC Fish Pimephales promelas 7,4 µg/L 33d „Chemical Manufacturers Association (1991) Two environmental effects 4-Nonylphenol final reports 1. Chronic toxicity of Nonylphenol to the Mysid, Mysidopsis bahia: EnviroSystems Study Number 8977-CMA 2. Early life stage toxicity of Nonylphenol to the fath

EC100 Daphnia Daphnia magna > 400 µg/L 48h „Huels report No. DK-522, 1992 (unpublished)

EC0 Daphnia Daphnia magna < 100 µg/L 48h „Huels report No. DK-522, 1992 (unpublished)

EC50 Daphnia Daphnia magna 140 µg/L 48h „Huels report No. DK-522, 1992 (unpublished)

LOEC Daphnia Daphnia magna > 100 µg/L 21d „Huels report No. DL-143, 1992 (unpublished)

NOEC Daphnia Daphnia magna 0,024 mg/L 21d ICI PLC (1991) Nonyl Phenol: Chronic Toxicity to Daphnia Magna Report No: BLS1319/B (Interim) BL4176/B (Final)

EC90 Algae Scenedesmus subspicatus (Desmodesmus subspicatus) 3,2 mg/L 72h Huels study (unpublished)

EC10 Algae Scenedesmus subspicatus (Desmodesmus subspicatus) 0,5 mg/L 72h Huels study (unpublished)

EC50 Algae Scenedesmus subspicatus (Desmodesmus subspicatus) 1,3 mg/L 72h Huels study (unpublished)

a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 135 mg/L 96h IUCLID

a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus = 1351 mg/L 96h EPA

a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 14 mg/L 48h IUCLID

a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata 36 mg/L 96h EPA

a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata 16 mg/L 72h EPA

a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 13 mg/L 72h IUCLID

a) Aquatic acute toxicity : LC50 Fish Pimephales promelas 1950 mg/L 96h EPA

a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata > 1000 mg/L 96h IUCLID

a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss >= 100 mg/L 96h IUCLID

a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 32 mg/L 48h IUCLID

a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 495 mg/L 72h IUCLID

a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata = 248 mg/L 96h IUCLID

a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 16 mg/L 48h IUCLID

a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 1164 mg/L 72h IUCLID

a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 345,60000 mg/L 96h EPA

a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 592 mg/L 96h IUCLID

a) Aquatic acute toxicity : LC50 Fish Leuciscus idus = 430,00000 mg/L 96h

a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 37,00000 mg/L 24h

a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 16,00000 mg/L 48h

10-20 % Aminoethylpiperazine

CAS: 140-31-8

0.1-0.25 % Diethylene triamine

CAS: 111-40-0

Persistence and degradability

N.A.

Bioaccumulative potential

N.A.

Mobility in soil

N.A.

Other adverse effects

N.A.

13. Disposal considerations

Safe handling and methods for disposal

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

14. Transport information

UN number

TDG-UN number: UN1760

ADR-UN number: 1760

DOT-UN Number: UN1760

IATA-Un number: 1760

IMDG-Un number: 1760

UN proper shipping name

TDG-Shipping Name: CORROSIVE LIQUID, N.O.S. (4-Nonylphenol, branched - Aminoethylpiperazine)

ADR-Shipping Name: CORROSIVE LIQUID, N.O.S. (4-Nonylphenol, branched - Aminoethylpiperazine)

DOT-Proper Shipping Name: Corrosive liquids, n.o.s. (4-Nonylphenol, branched - Aminoethylpiperazine)

IATA-Technical name: CORROSIVE LIQUID, N.O.S. (4-Nonylphenol, branched - Aminoethylpiperazine)

IMDG-Technical name: CORROSIVE LIQUID, N.O.S. (4-Nonylphenol, branched - Aminoethylpiperazine)

Transport hazard class(es)

TDG-Class: 8

ADR-Class: 8

DOT-Hazard Class: 8

IATA-Class: 8

IMDG-Class: 8

Packing group

TDG-Packing Group: II

ADR-Packing Group: II

DOT Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

Environmental hazards

Marine pollutant: Yes

Environmental Pollutant: N.A.

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

N.A.

Special precautions in connection with transport or conveyance

TDG:

TDG Special provisions: 16

Department of Transportation (DOT):

DOT-Special Provision(s): B2, IB2, T11, TP2, TP27

DOT-Label(s): 8

DOT-Symbol: N/A

DOT-Cargo Aircraft: N/A

DOT-Passenger Aircraft: N/A

DOT-Bulk: N/A

DOT-Non-Bulk: N/A

Road and Rail (ADR-RID):

ADR-Label: 8

ADR-Hazard identification number: 80

ADR-Transport category (Tunnel restriction code): 2 (E)

Air (IATA):

IATA-Passenger Aircraft: 851

IATA-Cargo Aircraft: 855

IATA-Label: 8

IATA-Subrisk: -

IATA-Erg: 8L

IATA-Special Provisions: A3 A803

Sea (IMDG):

IMDG-Stowage Code: Category B

IMDG-Stowage Note: Clear of living quarters.

IMDG-Subrisk: -

IMDG-Special Provisions: 274

IMDG-Page: N/A

IMDG-Label: N/A

IMDG-EMS: F-A, S-B

IMDG-MFAG: N/A

15. Regulatory information

Canada - Federal regulations

DSL - Domestic Substances List

DSL Inventory:

All the substances are listed in the DSL.

NDSL - Non Domestic Substances List

NDSL Inventory:

NPRI - National Pollutant Release Inventory**Substances listed in NPRI:**

no substances listed

USA - Federal regulations**TSCA - Toxic Substances Control Act****TSCA inventory:**

All the components are listed on the TSCA inventory

TSCA listed substances:

4-Nonylphenol, branched	is listed in TSCA	Section 8b, Section 8a - PAIR
Aminoethylpiperazine	is listed in TSCA	Section 8b
Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine	is listed in TSCA	Section 8b
BRANCHED 2-NONYLPHENOL	is listed in TSCA	Section 8b, Section 8a - PAIR, Section 5a - SNUR, Section 12b
2,4,6-Tri(dimethylaminomethyl)phenol	is listed in TSCA	Section 8b
Diethylene triamine	is listed in TSCA	Section 8b

SARA - Superfund Amendments and Reauthorization Act**Section 302 - Extremely Hazardous Substances:**

no substances listed

Section 304 - Hazardous substances:

no substances listed

Section 313 - Toxic chemical list:

no substances listed

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act**Substance(s) listed under CERCLA:**

no substances listed

CAA - Clean Air Act**CAA listed substances:**

no substances listed

CWA - Clean Water Act**CWA listed substances:**

no substances listed

USA - State specific regulations**California Proposition 65****Substance(s) listed under California Proposition 65:**

no substances listed

Massachusetts Right to know**Substance(s) listed under Massachusetts Right to know:**

Aminoethylpiperazine

Diethylene triamine

Pennsylvania Right to know**Substance(s) listed under Pennsylvania Right to know:**

Aminoethylpiperazine

Diethylene triamine

New Jersey Right to know**Substance(s) listed under New Jersey Right to know:**

Aminoethylpiperazine

Diethylene triamine

16. Other information

Code	Description
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.

- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H335 May cause respiratory irritation.
- H341 Suspected of causing genetic defects .
- H341.A Suspected of causing genetic defects if inhaled.
- H360 May damage fertility or the unborn child <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
- H360FD May damage fertility. May damage the unborn child.
- H361 Suspected of damaging fertility or the unborn child <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
- H371 May cause damage to organs <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
- H371.A May cause damage to organs if inhaled.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

Safety Data Sheet dated: 10/11/2017 - version 2

Product code: 2112

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. The information herein is presented in good faith and believed to be accurate as of the effective date given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

This document was prepared by a competent person who has received appropriate training.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This SDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
- RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
- IMDG: International Maritime Code for Dangerous Goods.
- IATA: International Air Transport Association.
- IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
- ICAO: International Civil Aviation Organization.
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
- GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
- CLP: Classification, Labeling, Packaging.
- EINECS: European Inventory of Existing Commercial Chemical Substances.
- INCI: International Nomenclature of Cosmetic Ingredients.
- CAS: Chemical Abstracts Service (division of the American Chemical Society).
- GefStoffVO: Ordinance on Hazardous Substances, Germany.
- LC50: Lethal concentration, for 50 percent of test population.
- LD50: Lethal dose, for 50 percent of test population.
- DNEL: Derived No Effect Level.
- PNEC: Predicted No Effect Concentration.
- TLV: Threshold Limiting Value.
- TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
- STEL: Short Term Exposure limit.
- STOT: Specific Target Organ Toxicity.
- WGK: German Water Hazard Class.
- KSt: Explosion coefficient.

Paragraphs modified from the previous revision:

- 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 12. ECOLOGICAL INFORMATION
- 15. REGULATORY INFORMATION