Safety Data Sheet
ULTRABOND G-21 PART A
Safety Data Sheet dated: 5/12/2015 - version 1
Date of first edition: 5/12/2015

1. IDENTIFICATION

Product identifier
Mixture identification:
Trade name: ULTRABOND G-21 PART A
Recommended use of the chemical and restrictions on use
Recommended use: Adhesive
Restrictions on use: N.A.
Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party
Company: MAPEI CORP. (USA and Puerto Rico)
1144 East Newport Center Drive - 33442 - Deerfield Beach - FL - USA
Emergency 24 hour numbers:
(USA) CHEMTREC 1-800-424-9300
(Canada) CANUTEC 1-613-996-6666

2. HAZARD(S) IDENTIFICATION

Classification of the chemical

Classification of the chemical

Skin Sens. 1A	May cause an allergic skin reaction.
Muta. 2	Suspected of causing genetic defects if inhaled.
Carc. 1A	May cause cancer if inhaled.
Repr. 2	Suspected of damaging fertility or the unborn child if inhaled.
STOT RE 1	Causes damage to organs through prolonged or repeated exposure if inhaled.
Aquatic Chronic 3	Harmful to aquatic life with long lasting effects.

Label elements

Symbols:

Danger

Code	Description
H317	May cause an allergic skin reaction.
H341.A	Suspected of causing genetic defects if inhaled.
H350.A	May cause cancer if inhaled.
H361.A	Suspected of damaging fertility or the unborn child if inhaled.
H372.A	Causes damage to organs through prolonged or repeated exposure if inhaled.
H412	Harmful to aquatic life with long lasting effects.

Code	Description
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260.B	Do not breathe dust.
P264.2	Wash skin thoroughly after handling.
P270	Do no 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.
P302+P352.A	IF ON SKIN: Wash with plenty of water.

P314	Get medical advice/attention if you feel unwell.
P321.A	Specific treatment (see supplementary instructions on this label)
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501.A	Dispose of contents/container in accordance with applicable regulations.

Ingredient(s) with unknown acute toxicity:

None

Hazards not otherwise classified identified during the classification process:

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

N.A.

Mixtures

Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:

List of components

Quantity	Name	Ident. Numb.	Classification
5-10 %	Epoxy Resin	CAS:25068-38-6 EC:500-033-5 Index:603-074-00-8	Eye Irrit. 2A, H319; Skin Irrit. 2, H315; Skin Sens. 1, H317; Aquatic Chronic 2, H411
1-5 %	o-Cresylglycidyl ether	CAS:2210-79-9	Skin Irrit. 2, H315; Skin Sens. 1A, H317; Muta. 2, H341
1-5 %	Silica Sand	CAS:14808-60-7	Carc. 1A, H350.A; STOT RE 1, H372.A
0.1-1 %	Nonylphenol	CAS:25154-52-3	Repr. 2, H361; Skin Corr. 1B, H314; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302

4. FIRST AID MEASURES

Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Remove contaminated clothing immediately and dispose off safely.

In case of eyes contact:

Wash immediately with water.

In case of Ingestion:

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

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

N.A.

Indication of any immediate medical attention and special treatment needed

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

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO2).

Unsuitable extinguishing media:

None in particular.

Specific hazards arising from the chemical

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.

Contamined 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
Silica Sand	ACGIH			0,025					A2 - Suspected Human Carcinogen;lung cancer;pulmonary fibrosis;

Appropriate engineering controls: N.A.

Individual protection measures

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: 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:

Polyurethane prepolymer	a) acute toxicity	LD50 Skin Rabbit = 2031mg/kg LD50 Oral Rat = 580mg/kg
Epoxy Resin	a) acute toxicity	LD50 Oral Rat 11400mg/kg
o-Cresylglycidyl ether	a) acute toxicity	LC50 Inhalation Rat = 6090mg/m3 4h
Silica Sand	a) acute toxicity	LD50 Oral Rat = 500mg/kg
Nonylphenol	a) acute toxicity	LD50 Skin Rabbit = 2031mg/kg LD50 Oral Rat = 580mg/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

Toxicity

Adopt good working practices, so that the product is not released into the environment.
Eco-Toxicological Information:

List of components with eco-toxicological properties

Quantity	Component	Ident. Numb.	Ecotox Infos
1-5 %	Silica Sand	CAS: 14808-60-7	LC50 a) Aquatic acute toxicity carp> 10000,00000mg/L 72h
0.1-1 %	Nonylphenol	CAS: 25154-52-3	LC50 a) Aquatic acute toxicity Fish Pimephales promelas= 135mg/L 96h
			EC50 a) Aquatic acute toxicity Daphnia Daphnia magna= 14mg/L 48h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata= 41mg/L 96h IUCLID
			EC50 a) Aquatic acute toxicity Algae Desmodesmus subspicatus= 13mg/L 72h IUCLID

Persistence and degradability

N.A.

Bioaccumulative potential

N.A.

Mobility in soil

N.A.

Other adverse effects

N.A.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste must be handled in accordance with all federal, state, provincial, and local regulations. Consult authorities before disposal.

14. TRANSPORT INFORMATION

UN number

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

UN proper shipping name

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)

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

Packing group

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 MARPOL73/78 and the IBC Code

N.A.

Special precautions

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 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

USA - Federal regulations

TSCA - Toxic Substances Control Act

TSCA inventory:

All the components are listed on the TSCA inventory

TSCA listed substances:

Epoxy Resin	is listed in TSCA	Section 8b
o-Cresylglycidyl ether	is listed in TSCA	Section 8b, Section 8a - PAIR
Silica Sand	is listed in TSCA	Section 8b
Nonylphenol	is listed in TSCA	Section 8b, Section 8a - PAIR

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:

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:

Silica Sand

Nonylphenol

Pennsylvania Right to know

Substance(s) listed under Pennsylvania Right to know:

Silica Sand

Nonylphenol

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 <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
H341.A	Suspected of causing genetic defects if inhaled.
H350.A	May cause cancer if inhaled.
H361	Suspected of damaging fertility or the unborn child <state specific effect if known> <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
H361.A	Suspected of damaging fertility or the unborn child if inhaled.
H372.A	Causes damage to organs through prolonged or repeated exposure 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.

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Product code: 2111

Additional classification information

HMIS Health: 1 = SLIGHT

HMIS Health - Is health hazard chronic?: Yes

HMIS Flammability: 1 = Combustible if heated

HMIS Reactivity: 0 = MINIMAL

HMIS P.P.E.: Safety glasses, gloves, vapor respirators

NFPA Health: 1 = SLIGHT

NFPA Flammability: 1 = Combustible if heated

NFPA Reactivity: 0 = MINIMAL

NFPA Special Risk: NONE

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: 5/13/2015 - version 1
Date of first edition: 5/13/2015

1. IDENTIFICATION

Product identifier
Mixture identification:
Trade name: ULTRABOND G-21 PART B
Recommended use of the chemical and restrictions on use
Recommended use: Adhesive
Restrictions on use: N.A.
Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party
Company: MAPEI CORP. (USA and Puerto Rico)
1144 East Newport Center Drive - 33442 - Deerfield Beach - FL - USA
Emergency 24 hour numbers:
(USA) CHEMTREC 1-800-424-9300
(Canada) CANUTEC 1-613-996-6666

2. HAZARD(S) IDENTIFICATION

Classification of the chemical

Classification of the chemical

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.
Resp. Sens. 1	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1A	May cause an allergic skin reaction.
Repr. 2	Suspected of damaging fertility or the unborn child if inhaled.
Aquatic Acute 1	Very toxic to aquatic life.
Aquatic Chronic 1	Very toxic to aquatic life with long lasting effects.

Label elements

Symbols:

Danger

Code	Description
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.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361.A	Suspected of damaging fertility or the unborn child if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Code	Description
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260.B	Do not breathe dust.

P264.2	Wash skin thoroughly after handling.
P270	Do no 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.
P284	[In case of inadequate ventilation] wear respiratory 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.
P302+P352.A	IF ON SKIN: Wash with plenty of water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position 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.
P310.A	Immediately call a POISON CENTER.
P321.A	Specific treatment (see supplementary instructions on this label)
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311.B	If experiencing respiratory symptoms: Call a doctor.
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.

Ingredient(s) with unknown acute toxicity:

None

Hazards not otherwise classified identified during the classification process:

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

N.A.

Mixtures

Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:

List of components

Quantity	Name	Ident. Numb.	Classification
60-70 %	4-Nonylphenol, branched	CAS:84852-15-3 EC:284-325-5 Index:601-053-00-8	Repr. 2, H361; Skin Corr. 1B, H314; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302
10-20 %	Aminoethylpiperazine	CAS:140-31-8	Acute Tox. 3, H311; Acute Tox. 4, H302; Skin Corr. 1B, H314; Skin Sens. 1, H317; Aquatic Chronic 3, H412
10-20 %	Fatty acids, C18-unsaturated, dimers, reaction products with Polyethylenepolyamines	CAS:68410-23-1	Skin Irrit. 2, H315; Eye Dam. 1, H318; Aquatic Chronic 2, H411
1-5 %	2,4,6-Tri(dimethylaminomethyl)phenol	CAS:90-72-2	Skin Corr. 1B, H314; Skin Sens. 1A, H317; Aquatic Chronic 3, H412
1-5 %	Triethylene tetramine	CAS:112-24-3	Skin Corr. 1B, H314; Skin Sens. 1, H317; Aquatic Chronic 3, H412; Acute Tox. 4, H312
0.1-1 %	Ethylene diamine	CAS:107-15-3	Flam. Liq. 3, H226; Skin Corr. 1B, H314; Resp. Sens. 1, H334; Skin Sens. 1, H317; Acute Tox. 4, H302; Acute Tox. 4, H312
0.1-1 %	Diethylene triamine	CAS:111-40-0	Skin Corr. 1B, H314; Skin Sens. 1, H317; Acute Tox. 4, H302; Acute Tox. 4, H312

4. FIRST AID MEASURES

Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

Remove contaminated clothing immediately and dispose off 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 opthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Give nothing to eat or drink.

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 any immediate medical attention and special treatment needed

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

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO_2).

Unsuitable extinguishing media:

None in particular.

Specific hazards arising from the chemical

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.

Contamined 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
Ethylene diamine	OSHA			25	10				
	ACGIH				10				A4 - Not Classifiable as a Human Carcinogen;Skin - potential significant contribution to overall

Diethylene triamine	ACGIH	1	exposure by the cutaneous route; 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

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 1300mg/kg
		LD50 Skin Rabbit > 2000mg/kg
Aminoethylpiperazine	a) acute toxicity	LD50 Skin Rabbit = 880µL/kg
		LD50 Oral Rat = 2140mg/kg
2,4, 6-Tri(dimethylaminomethyl) phenol	a) acute toxicity	LD50 Skin Rat = 1280mg/kg
		LD50 Oral Rat = 1000mg/kg
Triethylene tetramine	a) acute toxicity	LD50 Skin Rabbit = 550mg/kg
		LD50 Oral Rat = 2500mg/kg
Diethylene triamine	a) acute toxicity	LD50 Skin Rabbit = 672mg/kg
		LD50 Oral Rat = 819mg/kg
Ethylene diamine	a) acute toxicity	LD50 Skin Rabbit = 550mg/kg
		LD50 Oral Rat = 637mg/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

Toxicity

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

Eco-Toxicological Information:

List of components with eco-toxicological properties

Quantity	Component	Ident. Numb.	Ecotox Infos
60-70 %	4-Nonylphenol, branched	CAS: 84852-15-3 - EINECS: 284-325-5 - 67-548-EC: 601-053-00-8	LC50 Fish Pimephales promelas0,135mg/L 96h ,,Holcombe, G.W., Phipps, G.L., Knuth, M.L. and Felhaber, T. (1984) Environ. Pollut. (Series A) 35, 367-38
			LC100 Fish Leuciscus idus1,1mg/L 48h ,,Huels study, 1988 (unpublished
			LC50 Fish Leuciscus idus0,95mg/L 48h ,,Huels study, 1988 (unpublished

			LOEC Fish Pimephales promelas14µg/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 fat
			NOEC Fish Pimephales promelas7,4µg/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 fat
			EC100 Daphnia Daphnia magna> 400µg/L 48h ,,Huels report No. DK-522, 1992 (unpublished
			EC0 Daphnia Daphnia magna< 100µg/L 48h ,,Huels report No. DK-522, 1992 (unpublished
			EC50 Daphnia Daphnia magna140µg/L 48h ,,Huels report No. DK-522, 1992 (unpublished
			LOEC Daphnia Daphnia magna> 100µg/L 21d ,,Huels report No. DL-143, 1992 (unpublished
			NOEC Daphnia Daphnia magna0,024mg/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)3,2mg/L 72h Huels study (unpublished)
			EC10 Algae Scenedesmus subspicatus (Desmodesmus subspicatus)0,5mg/L 72h Huels study (unpublished)
			EC50 Algae Scenedesmus subspicatus (Desmodesmus subspicatus)1,3mg/L 72h Huels study (unpublished)
			LC50 a) Aquatic acute toxicity Fish Pimephales promelas= 135mg/L 96h IUCLID
			LC50 a) Aquatic acute toxicity Fish Lepomis macrochirus= 1351mg/L 96h EPA
			EC50 a) Aquatic acute toxicity Daphnia Daphnia magna= 14mg/L 48h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata36mg/L 96h EPA
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata16mg/L 72h EPA
			EC50 a) Aquatic acute toxicity Algae Desmodesmus subspicatus= 13mg/L 72h IUCLID
10-20 %	Aminoethylpiperazine	CAS: 140-31-8	LC50 a) Aquatic acute toxicity Fish Pimephales promelas1950mg/L 96h EPA
			LC50 a) Aquatic acute toxicity Fish Poecilia reticulata> 1000mg/L 96h IUCLID
			LC50 a) Aquatic acute toxicity Fish Oncorhynchus mykiss>= 100mg/L 96h IUCLID
			EC50 a) Aquatic acute toxicity Daphnia Daphnia magna= 32mg/L 48h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata= 495mg/L 72h IUCLID
1-5 %	Triethylene tetramine	CAS: 112-24-3	LC50 a) Aquatic acute toxicity Fish Poecilia reticulata= 570mg/L 96h IUCLID
			LC50 a) Aquatic acute toxicity Fish Pimephales promelas= 495mg/L 96h IUCLID
			EC50 a) Aquatic acute toxicity Daphnia Daphnia magna= 311mg/L 48h IUCLID
			EC50 a) Aquatic acute toxicity Algae Desmodesmus subspicatus= 2,50000mg/L 72h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata= 20mg/L 72h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata= 3,70000mg/L 96h EPA
0.1-1 %	Ethylene diamine	CAS: 107-15-3	LC50 a) Aquatic acute toxicity Fish Pimephales promelas986mg/L 96h EPA
			LC50 a) Aquatic acute toxicity Fish Poecilia reticulata180mg/L 96h EPA
			EC50 a) Aquatic acute toxicity Daphnia Daphnia magna= 17mg/L 48h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata= 645mg/L 72h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata= 151mg/L 96h IUCLID
0.1-1 %	Diethylene triamine	CAS: 111-40-0	LC50 a) Aquatic acute toxicity Fish Poecilia reticulata= 248mg/L 96h IUCLID
			EC50 a) Aquatic acute toxicity Daphnia Daphnia magna= 16mg/L 48h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata= 1164mg/L 72h IUCLID
			EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata= 345,60000mg/L 96h EPA
			EC50 a) Aquatic acute toxicity Algae Desmodesmus subspicatus= 592mg/L 96h IUCLID
			LC50 a) Aquatic acute toxicity Fish Leuciscus idus= 430,00000mg/L 96h
			EC50 a) Aquatic acute toxicity Daphnia Daphnia magna= 37,00000mg/L 24h
			EC50 a) Aquatic acute toxicity Daphnia Daphnia magna= 16,00000mg/L 48h

Persistence and degradability

N.A.

Bioaccumulative potential

N.A.

Mobility in soil

N.A.

Other adverse effects

N.A.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste must be handled in accordance with all federal, state, provincial, and local regulations. Consult authorities before disposal.

14. TRANSPORT INFORMATION

UN number

ADR-UN number: 1760
DOT - UN Number: UN1760
IATA-Un number: 1760
IMDG-Un number: 1760

UN proper shipping name

ADR-Shipping Name: CORROSIVE LIQUID, N.O.S.
DOT - Proper Shipping Name: Corrosive liquids, n.o.s.
IATA-Technical name: CORROSIVE LIQUID, N.O.S.
IMDG-Technical name: CORROSIVE LIQUID, N.O.S.

Transport hazard class(es)

ADR-Class: 8
DOT - Hazard Class: 8
IATA-Class: 8
IMDG-Class: 8

Packing group

ADR-Packing Group: III
DOT-Packing group: III
IATA-Packing group: III
IMDG-Packing group: III

Environmental hazards

Marine pollutant: Yes
Environmental Pollutant: N.A.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N.A.

Special precautions

Department of Transportation (DOT):

DOT-Special Provision(s): IB3, T7, TP1, TP28
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 Tunnel Restriction Code: 3 (E)

Air (IATA):

IATA-Passenger Aircraft: 852
IATA-Cargo Aircraft: 856
IATA-Label: 8
IATA-Subrisk: -
IATA-Erg: 8L
IATA-Special Provisions: A3 A803

Sea (IMDG):

IMDG-Stowage Code: Category A
IMDG-Stowage Note: Clear of living quarters.
IMDG-Subrisk: -
IMDG-Special Provisions: 223 274
IMDG-Page: N/A
IMDG-Label: N/A
IMDG-EMS: F-A, S-B
IMDG-MFAG: N/A

15. REGULATORY INFORMATION

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, reaction products with Polyethylenepolyamines	is listed in TSCA	Section 8b
2,4,6-Tri(dimethylaminomethyl)phenol	is listed in TSCA	Section 8b
Triethylene tetramine	is listed in TSCA	Section 8b
Ethylene diamine	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:

Ethylene diamine

Section 304 - Hazardous substances:

Ethylene diamine

Section 313 - Toxic chemical list:

no substances listed

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

Substance(s) listed under CERCLA:

Ethylene diamine	Reportable quantity:	5000	pounds
	Reportable quantity for mixture:	2493765.586	pounds

CAA - Clean Air Act

CAA listed substances:

Ethylene diamine	is listed in CAA	Section 112(b) - HON

CWA - Clean Water Act

CWA listed substances:

Ethylene diamine	is listed in CWA	Section 311

USA - State specific regulations

California Proposition 65

Substance(s) listed under California Proposition 65:

Diethylene triamine	Listed as carcinogen

Massachusetts Right to know

Substance(s) listed under Massachusetts Right to know:

Aminoethylpiperazine

Triethylene tetramine

Ethylene diamine

Diethylene triamine

Pennsylvania Right to know

Substance(s) listed under Pennsylvania Right to know:

Aminoethylpiperazine

Triethylene tetramine

Ethylene diamine

Diethylene triamine

New Jersey Right to know

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

Aminoethylpiperazine

Triethylene tetramine

Ethylene diamine

Diethylene triamine

16. OTHER INFORMATION

Code	Description
H226	Flammable liquid and vapour.
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.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361	Suspected of damaging fertility or the unborn child <state specific effect if known> <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
H361.A	Suspected of damaging fertility or the unborn child 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: 5/13/2015 - version 1

Product code: 2112

Additional classification information

HMIS Health: 3 = SERIOUS

HMIS Health - Is health hazard chronic?: No

HMIS Flammability: 1 = Combustible if heated

HMIS Reactivity: 0 = MINIMAL

HMIS P.P.E.: Splash goggles, gloves, chemical apron, vapor respirator

NFPA Health: 3 = SERIOUS

NFPA Flammability: 1 = Combustible if heated

NFPA Reactivity: 0 = MINIMAL

NFPA Special Risk: NONE

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.