

Safety Data Sheet

POLYGLASS LRF CR PART A

Safety Data Sheet dated: 09/02/2021 - version 2

Date of first edition: 05/11/2021

1. IDENTIFICATION

Product identifier

Mixture identification:

Trade name: POLYGLASS LRF CR PART A

Trade code: PLY0055

Recommended use of the chemical and restrictions on use

Recommended use: Polyurethane-based adhesive

Restrictions on use: N.A.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Company: Polyglass U.S.A. Inc.

1111 West Newport Center Drive - 33442 - Deerfield Beach - FL - USA

Phone: 866-222-9782

Responsible: RDProductSafety@mapei.com

Emergency 24 hour numbers:

Emergency Number (USA/Canada) CHEMTREC 1(800) 424-9300 / 1(703) 527-3887

Emergency Transport CANUTEC (Canada) 1-613-996-6666

2. HAZARD(S) IDENTIFICATION



Classification of the chemical

Compr. Gas	Contains gas under pressure; may explode if heated.
Skin Irrit. 2	Causes skin irritation.
Skin Sens. 1	May cause an allergic skin reaction.
Eye Irrit. 2A	Causes serious eye irritation.
Acute Tox. 4	Harmful if inhaled.
Resp. Sens. 1	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
STOT SE 3	May cause respiratory irritation.
STOT RE 2	May cause damage to organs through prolonged or repeated exposure if inhaled.

Label elements

Pictograms and Signal Words



Danger

Hazard statements:

H280	Contains gas under pressure; may explode if heated.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

Precautionary statements:

P202	Do not handle until all safety precautions have been read and understood.
P251	Do not pierce or burn, even after use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P262	Do not get in eyes, on skin, or on clothing.

P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
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.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P501	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

Concentration (% w/w)	Name	Ident. Numb.	Classification	Registration Number
25-50 %	POLYMETHYLENE POLYPHENYLENE ISOCYANATE	CAS:9016-87-9	Acute Tox. 4, H332; STOT SE 3, H335; Skin Irrit. 2, H315; STOT RE 2, H373; Eye Irrit. 2A, H319; Resp. Sens. 1, H334; Skin Sens. 1, H317	
25-50 %	4,4'-METHYLENEDIPHENYL DIISOCYANATE	CAS:101-68-8 EC:202-966-0 Index:615-005-00-9	Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335; STOT RE 2, H373; Carc. 2, H351; Resp. Sens. 1, H334; Skin Sens. 1, H317	
10-20 %	TRI-(2-CHLOROISOPROPYL)PHOSPHATE	CAS:13674-84-5 EC:237-158-7	Acute Tox. 4, H302	

4. FIRST AID MEASURES

Description of first aid measures

In case of skin contact:

- Immediately take off all contaminated clothing.
- OBTAIN IMMEDIATE MEDICAL ATTENTION.
- Obtain medical attention if skin related symptoms persist.
- 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:

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 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).

Treatment:

(see paragraph 4.1)

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: Not Relevant

Oxidizing properties: Not Relevant

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.

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Limit leakages with earth or sand.

Methods and material for containment and cleaning up

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

Retain contaminated washing water and dispose it.

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.

Do not use on extensive surface areas in premises where there are occupants.

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.

Always keep in a well ventilated place.

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

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
4,4'-METHYLENEDIPHENYL DIISOCYANATE	ACGIH				0.005			respiratory sensitization (listed under Methylene bisphenyl isocyanate (MDI));
	OSHA		C			0.2	0.02	
	MAK	GERMANY		0.05				respiratory sensitization (listed under Methylene bisphenyl isocyanate (MDI));
	ACGIH				0.005			
MAK	AUSTRIA		0.05	0.005	0.1	0.01		

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:

Suitable materials for safety gloves; 29 CFR 1910.138 - ANSI/ISEA 105:

Polychloroprene - CR: thickness $\geq 0,5\text{mm}$; breakthrough time $\geq 480\text{min}$.

Nitrile rubber - NBR: thickness $\geq 0,35\text{mm}$; breakthrough time $\geq 480\text{min}$.

Butyl rubber - IIR: thickness $\geq 0,5\text{mm}$; breakthrough time $\geq 480\text{min}$.

Fluorinated rubber - FKM: thickness $\geq 0,4\text{mm}$; breakthrough time $\geq 480\text{min}$.

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

Respiratory protection:

Respiratory protection must be used where exposure levels exceed workplace exposure limits. Refer to 29 CFR 1910.134 - CSA Z94.4 for information on selection and use of appropriate respiratory protection equipment.

Use adequate protective respiratory equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state: Liquid

Appearance and colour: liquid Amber

Odour: mild

Odour threshold: Not Relevant

pH: Not Relevant

Melting point / freezing point: Not Relevant

Initial boiling point and boiling range: 208 °C (406 °F)

Flash point: 204 °C (399 °F)

Evaporation rate: Not Relevant

Upper/lower flammability or explosive limits: Not Relevant

Vapour density: Not Relevant

Vapour pressure: Not Relevant

Relative density: 1.23 g/cm³

Solubility in water: Insoluble

Solubility in oil: Not Relevant

Partition coefficient (n-octanol/water): Not Relevant

Auto-ignition temperature: Not Relevant

Decomposition temperature: Not Relevant

Viscosity: Not Relevant

Explosive properties: Not Relevant
Oxidizing properties: Not Relevant
Solid/gas flammability: Not Relevant

Other information

Substance Groups relevant properties Not Relevant
Miscibility: Not Relevant
Fat Solubility: Not Relevant
Conductivity: Not Relevant

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:

4,4'- METHYLENEDIPHENYL DIISOCYANATE	a) acute toxicity	LC50 Inhalation Rat = 369 mg/m ³ 4h LD50 Oral Rat = 31600 mg/kg
TRI-(2- CHLOROISOPROPYL) PHOSPHATE	a) acute toxicity	LD50 Skin Rabbit = 1230 mg/kg LC50 Inhalation Rat = 5 mg/l 4h LD50 Skin Rabbit > 5000 mg/kg LC50 Inhalation Rat > 5.05 mg/l 4h LD50 Oral Rat = 1500 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
Toxicological kinetics, metabolism
and distribution information
- i) STOT-repeated exposure
- j) aspiration hazard

Substance(s) listed on the IARC Monographs:

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

Component	Ident. Numb.	Ecotox Infos
TRI-(2- CHLOROISOPROPYL)PHOSPHATE	CAS: 13674-84-5 - EINECS: 237-158-7	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 98 mg/L 96h a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata = 30 mg/L 96h a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 63 mg/L 48h IUCLID a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 45 mg/L 72h IUCLID a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 4 mg/L 96h IUCLID a) Aquatic acute toxicity : LC50 Fish Brachydanio rerio = 56.2 mg/L 96h

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**

The generation of waste should be avoided or minimized wherever possible. Recover if possible.

Methods of disposal:

Disposal of this product, solutions, packaging 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 nonrecyclable products via a licensed waste disposal contractor.

Do not dispose of waste into sewers.

Disposal considerations:

Do not allow to enter drains or watercourses.

Dispose of product according to all federal, state and local applicable regulations.

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

Dispose of containers contaminated by the product in accordance with local or national legal provisions. For further information, contact your local waste authority.

Special precautions:

This material and its container must be disposed of in a safe way. Care should be taken when handling untreated empty containers.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Empty containers or liners may retain some product residues. Do not re-use empty containers.

14. TRANSPORT INFORMATION

UN number

ADR-UN number: 3500
DOT-UN Number: UN3500
IATA-Un number: 3500
IMDG-Un number: 3500

UN proper shipping name

ADR-Shipping Name: CHEMICAL UNDER PRESSURE, N.O.S. (TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE - NITROGEN)
DOT-Proper Shipping Name: Chemical under pressure, n.o.s (TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE - NITROGEN)
IATA-Technical name: CHEMICAL UNDER PRESSURE, N.O.S. (TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE - NITROGEN)
IMDG-Technical name: CHEMICAL UNDER PRESSURE, N.O.S. (TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE - NITROGEN)

Transport hazard class(es)

ADR-Class: 2
DOT-Hazard Class: 2.2
IATA-Class: 2.2
IMDG-Class: 2.2

Packing group

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

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): 362, T50, TP40
DOT-Label(s): 2.2
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: 2.2
ADR-Hazard identification number: 20
ADR-Transport category (Tunnel restriction code): 3 (C/E)

Air (IATA) :

IATA-Passenger Aircraft: 218
IATA-Cargo Aircraft: 218
IATA-Label: 2.2
IATA-Subsidiary hazards: -
IATA-Erg: 2L
IATA-Special Provisioning: A187

Sea (IMDG) :

IMDG-Stowage Code: Category B
IMDG-Stowage Note: -
IMDG-Subsidiary hazards: -
IMDG-Special Provisioning: 274 362
IMDG-Page: N/A
IMDG-Label: N/A
IMDG-EMS: F-C, S-V
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:

4,4'-METHYLENEDIPHENYL DIISOCYANATE is listed in TSCA Section 8b Section 8a - PAIR

TRI-(2-CHLOROISOPROPYL)PHOSPHATE is listed in TSCA Section 8b

SARA - Superfund Amendments and Reauthorization Act

Section 302 - Extremely Hazardous Substances:

No substances listed

Section 304 - Hazardous substances:

4,4'-METHYLENEDIPHENYL DIISOCYANATE

Section 313 - Toxic chemical list:

4,4'-METHYLENEDIPHENYL DIISOCYANATE

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

Substance(s) listed under CERCLA:

4,4'-METHYLENEDIPHENYL DIISOCYANATE Reportable quantity: 5000 pounds

CAA - Clean Air Act

CAA listed substances:

4,4'-METHYLENEDIPHENYL DIISOCYANATE is listed in CAA Section 112(b) - HAP 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:

No substances listed

Massachusetts Right to know

Substance(s) listed under Massachusetts Right to know:

4,4'-METHYLENEDIPHENYL DIISOCYANATE

Pennsylvania Right to know

Substance(s) listed under Pennsylvania Right to know:

4,4'-METHYLENEDIPHENYL DIISOCYANATE

New Jersey Right to know

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

4,4'-METHYLENEDIPHENYL DIISOCYANATE

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

16. OTHER INFORMATION

Safety Data Sheet dated: 9/2/2021 - version 2

Additional classification information

NFPA Health: 2 = Moderate
NFPA Flammability: 1 = Combustible if heated
NFPA Reactivity: 1 = Slight
NFPA Special Risk: N.A.



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.

Code	Description
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

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
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 11. TOXICOLOGICAL INFORMATION
- 12. ECOLOGICAL INFORMATION
- 15. REGULATORY INFORMATION

Safety Data Sheet

POLYGLASS LRF CR PART B

Safety Data Sheet dated: 09/02/2021 - version 2

Date of first edition: 05/11/2021



1. IDENTIFICATION

Product identifier

Mixture identification:

Trade name: POLYGLASS LRF CR PART B

Trade code: PLY0056

Recommended use of the chemical and restrictions on use

Recommended use: Polyurethane-based adhesive

Restrictions on use: N.A.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Company: Polyglass U.S.A. Inc.

1111 West Newport Center Drive - 33442 - Deerfield Beach - FL - USA

Phone: 866-222-9782

Responsible: RDProductSafety@mapei.com

Emergency 24 hour numbers:

Emergency Number (USA/Canada) CHEMTREC 1(800) 424-9300 / 1(703) 527-3887

Emergency Transport CANUTEC (Canada) 1-613-996-6666

2. HAZARD(S) IDENTIFICATION



Classification of the chemical

Compr. Gas Contains gas under pressure; may explode if heated.

Eye Irrit. 2A Causes serious eye irritation.

Repr. 2 Suspected of damaging fertility or the unborn child if inhaled, in contact with skin and if swallowed.

Label elements

Pictograms and Signal Words



Warning

Hazard statements:

H280 Contains gas under pressure; may explode if heated.

H319 Causes serious eye irritation.

H361 Suspected of damaging fertility or the unborn child if inhaled, in contact with skin and if swallowed.

Precautionary statements:

P202 Do not handle until all safety precautions have been read and understood.

P251 Do not pierce or burn, even after use.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

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

P284 [In case of inadequate ventilation] wear respiratory protection.

P302+P352 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.

P321 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.

P410+P403 Protect from sunlight. Store in a well-ventilated place.
P501 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

Concentration (% w/w)	Name	Ident. Numb.	Classification	Registration Number
20-25 %	TRI-(2-CHLOROISOPROPYL)PHOSPHATE	CAS:13674-84-5 EC:237-158-7	Acute Tox. 4, H302	
5-10 %	DIETHYLENE GLYCOL	CAS:111-46-6 EC:203-872-2 Index:603-140-00-6	Acute Tox. 4, H302; STOT RE 2, H373	
2.5-5 %	PROPYLENE CARBONATE	CAS:108-32-7 EC:203-572-1 Index:607-194-00-1	Eye Irrit. 2A, H319	

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 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

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).

Treatment:

- (see paragraph 4.1)

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: Not Relevant

Oxidizing properties: Not Relevant

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.

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Limit leakages with earth or sand.

Methods and material for containment and cleaning up

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

Retain contaminated washing water and dispose it.

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.

Do not use on extensive surface areas in premises where there are occupants.

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.

Always keep in a well ventilated place.

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

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 GLYCOL	MAK	GERMANY		44	10			
	MAK	AUSTRIA		44	10	176	40	
	MAK	SWITZERLAND		44	10			
PROPYLENE CARBONATE	MAK	GERMANY		8.5	2			

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:

Suitable materials for safety gloves; 29 CFR 1910.138 - ANSI/ISEA 105:

Polychloroprene - CR: thickness $\geq 0,5\text{mm}$; breakthrough time $\geq 480\text{min}$.

Nitrile rubber - NBR: thickness $\geq 0,35\text{mm}$; breakthrough time $\geq 480\text{min}$.

Butyl rubber - IIR: thickness $\geq 0,5\text{mm}$; breakthrough time $\geq 480\text{min}$.

Fluorinated rubber - FKM: thickness $\geq 0,4\text{mm}$; breakthrough time $\geq 480\text{min}$.

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

Respiratory protection:

Respiratory protection must be used where exposure levels exceed workplace exposure limits. Refer to 29 CFR 1910.134 - CSA Z94.4 for information on selection and use of appropriate respiratory protection equipment.

Use adequate protective respiratory equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state: Liquid

Appearance and colour: liquid Amber

Odour: Like: Amines

Odour threshold: Not Relevant

pH: Not Relevant

Melting point / freezing point: Not Relevant

Initial boiling point and boiling range: Not Relevant

Flash point: 200 °C (392 °F)

Evaporation rate: Not Relevant

Upper/lower flammability or explosive limits: Not Relevant

Vapour density: Not Relevant

Vapour pressure: Not Relevant

Relative density: 1.20 g/cm³

Solubility in water: partly soluble

Solubility in oil: Not Relevant

Partition coefficient (n-octanol/water): Not Relevant

Auto-ignition temperature: Not Relevant

Decomposition temperature: Not Relevant

Viscosity: Not Relevant

Explosive properties: Not Relevant

Oxidizing properties: Not Relevant

Solid/gas flammability: Not Relevant

Other information

Substance Groups relevant properties Not Relevant

Miscibility: Not Relevant

Fat Solubility: Not Relevant

Conductivity: Not Relevant

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:

TRI-(2-CHLOROISOPROPYL) PHOSPHATE a) acute toxicity LD50 Skin Rabbit = 1230 mg/kg

LC50 Inhalation Rat = 5 mg/l 4h

LD50 Skin Rabbit > 5000 mg/kg

LC50 Inhalation Rat > 5.05 mg/l 4h

LD50 Oral Rat = 1500 mg/kg

DIETHYLENE GLYCOL a) acute toxicity

LD50 Skin Rabbit = 11890 mg/kg

LD50 Oral Rat = 12565 mg/kg

LD50 Skin Rabbit = 11890 mg/kg

LC50 Inhalation Rat > 4600 mg/m³ 4h

PROPYLENE CARBONATE a) acute toxicity

LD50 Skin Rabbit > 20 ml/kg

LD50 Oral Rat = 29000 mg/kg

LD50 Skin Rabbit > 3000 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
- Toxicological kinetics, metabolism and distribution information
- 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

Component	Ident. Numb.	Ecotox Infos
TRI-(2-CHLOROISOPROPYL)PHOSPHATE	CAS: 13674-84-5 - EINECS: 237-158-7	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 98 mg/L 96h a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata = 30 mg/L 96h a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 63 mg/L 48h IUCLID a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 45 mg/L 72h IUCLID a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 4 mg/L 96h IUCLID a) Aquatic acute toxicity : LC50 Fish Brachydanio rerio = 56.2 mg/L 96h
DIETHYLENE GLYCOL	CAS: 111-46-6 - EINECS: 203-872-2 - INDEX: 603-140-	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 75200 mg/L 96h EPA

		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 84000 mg/L 48h IUCLID
PROPYLENE CARBONATE	CAS: 108-32-7 - EINECS: 203-572-1 - INDEX: 607-194-00-1	a) Aquatic acute toxicity : LC50 Fish Cyprinus carpio > 1000 mg/L 96h IUCLID
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna > 500 mg/L 48h IUCLID
		a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus > 500 mg/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**

The generation of waste should be avoided or minimized wherever possible. Recover if possible.

Methods of disposal:

Disposal of this product, solutions, packaging 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 nonrecyclable products via a licensed waste disposal contractor.

Do not dispose of waste into sewers.

Disposal considerations:

Do not allow to enter drains or watercourses.

Dispose of product according to all federal, state and local applicable regulations.

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

Dispose of containers contaminated by the product in accordance with local or national legal provisions. For further information, contact your local waste authority.

Special precautions:

This material and its container must be disposed of in a safe way. Care should be taken when handling untreated empty containers.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Empty containers or liners may retain some product residues. Do not re-use empty containers.

14. TRANSPORT INFORMATION**UN number**

ADR-UN number: 3500

DOT-UN Number: UN3500

IATA-Un number: 3500

IMDG-Un number: 3500

UN proper shipping name

ADR-Shipping Name: CHEMICAL UNDER PRESSURE, N.O.S. (TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE - NITROGEN)

DOT-Proper Shipping Name: Chemical under pressure, n.o.s (TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE - NITROGEN)

IATA-Technical name: CHEMICAL UNDER PRESSURE, N.O.S. (TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE - NITROGEN)

IMDG-Technical name: CHEMICAL UNDER PRESSURE, N.O.S. (TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE - NITROGEN)

Transport hazard class(es)

ADR-Class: 2

DOT-Hazard Class: 2.2

IATA-Class: 2.2

IMDG-Class: 2.2

Packing group

ADR-Packing Group: -

DOT-Packing group: -

IATA-Packing group: -

IMDG-Packing group: -

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): 362, T50, TP40

DOT-Label(s): 2.2

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: 2.2

ADR-Hazard identification number: 20

ADR-Transport category (Tunnel restriction code): 3 (C/E)

Air (IATA) :

IATA-Passenger Aircraft: 218

IATA-Cargo Aircraft: 218

IATA-Label: 2.2

IATA-Subsidiary hazards: -

IATA-Erg: 2L

IATA-Special Provisioning: A187

Sea (IMDG) :

IMDG-Stowage Code: Category B

IMDG-Stowage Note: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisioning: 274 362

IMDG-Page: N/A

IMDG-Label: N/A

IMDG-EMS: F-C, S-V

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:

TRI-(2-CHLOROISOPROPYL)PHOSPHATE is listed in TSCA Section 8b

DIETHYLENE GLYCOL is listed in TSCA Section 8b Section 5

PROPYLENE CARBONATE 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:

DIETHYLENE GLYCOL

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

Substance(s) listed under CERCLA:

No substances listed

CAA - Clean Air Act

CAA listed substances:

DIETHYLENE GLYCOL is listed in CAA Section 112(b) - HON

PROPYLENE CARBONATE 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:

No substances listed

Massachusetts Right to know

Substance(s) listed under Massachusetts Right to know:

No substances listed

Pennsylvania Right to know

Substance(s) listed under Pennsylvania Right to know:

DIETHYLENE GLYCOL

New Jersey Right to know

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

No substances listed

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

16. OTHER INFORMATION

Safety Data Sheet dated: 9/2/2021 - version 2

Additional classification information

NFPA Health: 2 = Moderate

NFPA Flammability: 1 = Combustible if heated

NFPA Reactivity: 1 = Slight

NFPA Special Risk: N.A.



NFPA

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.

Code	Description
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child if inhaled, in contact with skin and if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.

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