

Sassuolo, 04/05/2023

Subject: Restriction 74 on the safe use of diisocyanates

Dear Customer,

Kerakoll would like to inform you that on February 4, 2020, the REACH Committee voted in favor of the European Commission's proposal for a REACH restriction on diisocyanates.

The restriction was published on August 4, 2020 and applies from August 24, 2023 after a 3-year transition period.

The restriction stipulates that from August 24, 2023, the industrial and professional use of diisocyanates will no longer be allowed unless the overall concentration of diisocyanates is less than 0.1 percent by weight or operators have been trained in the safe use of diisocyanates.

As of Feb. 24, 2022, the placing on the market of diisocyanates is also no longer permitted unless the overall concentration of diisocyanates is less than 0.1 percent by weight or the supplier ensures that the recipient is aware of the regulatory requirements regarding the training of employees on the safe use of diisocyanates.

To this end, the supplier shall include the following statement on the packaging:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1596534449847&uri=CELEX:32020R1149>

Kerakoll has adapted the labels and MSDSs of the products involved as per the regulations.

Training, according to the Diisocyanates Regulation, can also be done online (see points 4 and 5 of restriction 74).

There are many online platforms in this regard that provide this service.

This same communication will be attached to the MSDSs of the finished products involved in this restriction.

We remain at your disposal for any clarification.

Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878

HYPER FOAM FIRE G

Date of first edition: 6/5/2026

Safety Data Sheet dated 30/07/2026 version 3

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

1.1. Product identifier

Mixture identification:

Trade name: HYPER FOAM FIRE G

Trade code: FO000870

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

Recommended use: Polyurethane-sealant

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel. +39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

Ireland Emergency medical information: (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland.

Members of the public Number (8 am-10 pm): +353 (0)1 809 2166

Healthcare professional telephone Number (24hrs): +353 (0)1 809 2566

Malta In case of emergency call: +356 2395 2000 (24h)

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Aerosols 1	Extremely flammable aerosol. Pressurized container: may burst if heated.
Acute Tox. 4	Harmful if inhaled.
Skin Irrit. 2	Causes skin irritation.
Eye Irrit. 2	Causes serious eye irritation.
Resp. Sens. 1B	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1	May cause an allergic skin reaction.
Carc. 2	Suspected of causing cancer.
STOT SE 3	May cause respiratory irritation.
STOT RE 2	May cause damage to organs through prolonged or repeated exposure.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Hazard pictograms and Signal Word



Danger

Hazard statements

H222, H229	Extremely flammable aerosol. Pressurized container: may burst 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.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.
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.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

4,4' diphenylmethanediisocyanate, isomere, homologue and mixtures

Reaction products of phosphoryl trichloride and 2-methyloxirane

Special provisions according to Annex XVII of REACH and subsequent amendments:

As from 24 August 2023 adequate training is required before industrial or professional use.

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: HYPER FOAM FIRE G

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Numb.	Classification	Registration Number
$\geq 20 < 50 \%$	4,4' diphenylmethanediisocyanate, CAS:9016-87-9 isomere, homologue and mixtures		Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Resp. Sens. 1B, H334; Skin Sens. 1, H317; Carc. 2, H351; STOT RE 2, H373; STOT SE 3, H335 Acute Toxicity Estimate: ATE - Inhalation (Dust/mist): 1.5 mg/l	
$\geq 10 < 20 \%$	Reaction products of phosphoryl trichloride and 2-methyloxirane	CAS:1244733-77-4 EC:807-935-0	Acute Tox. 4, H302; Carc. 2, H351; Aquatic Chronic 3, H412	01-2119486772-26
$\geq 5 < 10 \%$	Dimethyl ether	CAS:115-10-6 EC:204-065-8	Flam. Gas 1, H220; Press. Gas, H280	01-2119472128-37
$\geq 5 < 10 \%$	and isobutane	CAS:75-28-5 EC:200-857-2 Index:601-004-00-0	Flam. Gas 1, H220; Press. Gas, H280	01-2119485395-27

≥1-<3 %	triethyl phosphate	CAS:78-40-0 EC:201-114-5 Index:015-013-00-7	Acute Tox. 4, H302; Eye Irrit. 2, H319	01-2119492852-28
≥1-<3 %	Propane	CAS:74-98-6 EC:200-827-9 Index:601-003-00-5	Flam. Gas 1, H220; Press. Gas, H280	01-2119486944-21

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

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 ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

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

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.

4.2. Most important symptoms and effects, both acute and delayed

Eye irritation

Eye damages

Skin Irritation

Erythema

4.3. 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).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

CO2 or Dry chemical fire extinguisher.

Extinguishing media which must not be used for safety reasons:

Water.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

5.3. Advice for firefighters

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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

Wear personal protection equipment.

Remove all sources of ignition.

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

Provide adequate ventilation.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F. Store in closed containers and in a well-ventilated place

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

4,4' diphenylmethanediisocyanate, isomere, homologue and mixtures

CAS: 9016-87-9	NATION GERMANY AL	Long Term: 0.05 mg/m ³ Notes: DFG, H, Sah, Y, 12, E, 1;=2=(I) Source: TRGS 900
	NATION SLOVENIA AL	Long Term: 0.05 mg/m ³ ; Short Term: 0.05 mg/m ³ Notes: K, Y, (I), R2 Source: UL št. 72, 11. 5. 2021
Dimethyl ether CAS: 115-10-6	EU	Long Term: 1920 mg/m ³ - 1000 ppm (8h)
	NATION AUSTRIA AL	Long Term: 1910 mg/m ³ - 1000 ppm; Short Term: Ceiling - 3820 mg/m ³ - 2000 ppm Notes: 60(Mow), 3x, MAK Source: GKV, BGBl. II Nr. 156/2021
	NATION BELGIUM AL	Long Term: 1920 mg/m ³ - 1000 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATION BULGARIA AL	Long Term: 1920 mg/m ³ - 1000 ppm Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATION CYPRUS AL	Long Term: 1920 mg/m ³ - 1000 ppm Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATION CZECHIA AL	Long Term: 1000 mg/m ³ ; Short Term: Ceiling - 2000 mg/m ³ Source: Nařízení vlády č. 361-2007 Sb
	NATION GERMANY AL	Long Term: 1900 mg/m ³ - 1000 ppm Notes: DFG, EU, 8(II) Source: TRGS 900

NATION DENMARK AL	Long Term: 1920 mg/m3 - 1000 ppm Notes: E Source: BEK nr 2203 af 29/11/2021
NATION SPAIN AL	Long Term: 1920 mg/m3 - 1000 ppm Notes: VLI Source: LEP 2022
NATION ESTONIA AL	Long Term: 1920 mg/m3 - 1000 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATION FINLAND AL	Long Term: 2000 mg/m3 - 1000 ppm Source: HTP-ARVOT 2020
NATION FRANCE AL	Long Term: 1920 mg/m3 - 1000 ppm Source: INRS outil65, arrêté du 30-06-2004 modifié
NATION GREECE AL	Long Term: 1920 mg/m3 - 1000 ppm Source: ΦΕΚ 227/A` 9.10.2001
NATION CROATIA AL	Long Term: 1920 mg/m3 - 1000 ppm Source: 2000/39/EZ
NATION HUNGARY AL	Long Term: 1920 mg/m3 Notes: EU1, N Source: 5/2020. (II. 6.) ITM rendelet
NATION IRELAND AL	Long Term: 1920 mg/m3 - 1000 ppm Notes: IOELV Source: 2021 Code of Practice
NATION ITALY AL	Long Term: 1920 mg/m3 - 1000 ppm Source: D.lgs. 81/2008, Allegato XXXVIII
NATION LITHUANIA AL	Long Term: 1920 mg/m3 - 1000 ppm; Short Term: 2280 mg/m3 - 1500 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATION LUXEMBOUR AL G	Long Term: 1920 mg/m3 - 1000 ppm Source: Mémorial A n.226 du 22 mars 2021
NATION LATVIA AL	Long Term: 1920 mg/m3 - 1000 ppm Source: KN325P1
NATION MALTA AL	Long Term: 1920 mg/m3 - 1000 ppm Source: S.L.424.24
NATION NETHERLAND AL S	Long Term: 950 mg/m3; Short Term: 1500 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
NATION NORWAY AL	Long Term: 384 mg/m3 - 200 ppm Notes: E Source: FOR-2021-06-28-2248
NATION POLAND AL	Long Term: 1000 mg/m3 Source: Dz.U. 2018 poz. 1286
NATION PORTUGAL AL	Long Term: 1920 mg/m3 - 1000 ppm Source: Decreto-Lei n.º 1/2021
NATION ROMANIA AL	Long Term: 1920 mg/m3 - 1000 ppm Notes: Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION SLOVAKIA AL	Long Term: 1920 mg/m3 - 1000 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION SLOVENIA AL	Long Term: 1920 mg/m3 - 1000 ppm; Short Term: 15360 mg/m3 - 8000 ppm Notes: EU1 Source: UL št. 72, 11. 5. 2021
NATION SWEDEN AL	Long Term: 950 mg/m3 - 500 ppm; Short Term: 1500 mg/m3 - 800 ppm Notes: V Source: AFS 2021:3
WEL- EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND Long Term: 766 mg/m3 - 400 ppm; Short Term: 958 mg/m3 - 500 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)

1,1-difluoroethane CAS: 75-37-6	SUVA	SWITZERLAND	Long Term: 1910 mg/m ³ - 1000 ppm Notes: Formel / Formal Source: suva.ch/valeurs-limites
	D		
and isobutane CAS: 75-28-5	ACGIH		Short Term: 1000 ppm Notes: EX - CNS impair
	NATION	AUSTRIA	Long Term: 1900 mg/m ³ - 800 ppm; Short Term: Ceiling - 3800 mg/m ³ - 1600 ppm Notes: 60(Mow), 3x, MAK Source: GKV, BGBl. II Nr. 156/2021
	AL		
	NATION	BELGIUM	Short Term: 2370 mg/m ³ - 980 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	AL		
	NATION	GERMANY	Long Term: 2400 mg/m ³ - 1000 ppm Notes: DFG, 4(II) Source: TRGS 900
	AL		
	NATION	ESTONIA	Long Term: 1900 mg/m ³ - 800 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	AL		
	NATION	FINLAND	Long Term: 1900 mg/m ³ - 800 ppm; Short Term: 2400 mg/m ³ - 1000 ppm Notes: liite 4 Source: HTP-ARVOT 2020
	AL		
	NATION	IRELAND	Short Term: 1000 ppm (15min)
	AL		
	NATION	SLOVENIA	Long Term: 2400 mg/m ³ - 1000 ppm; Short Term: 9600 mg/m ³ - 4000 ppm Source: UL št. 72, 11. 5. 2021
	AL		
	WEL-	SWITZERLAND	Long Term: 1900 mg/m ³ - 800 ppm
	EH40	D	
	SUVA	SWITZERLAND	Long Term: 1900 mg/m ³ - 800 ppm; Short Term: 7600 mg/m ³ - 3200 ppm Notes: SNC / ZNS Source: suva.ch/valeurs-limites
	D		
Propane CAS: 74-98-6	ACGIH		Notes: D, EX - Asphyxia
	NATION	AUSTRIA	Long Term: 1800 mg/m ³ - 1000 ppm; Short Term: Ceiling - 3600 mg/m ³ - 2000 ppm Notes: 60(Mow), 3x, MAK Source: BGBl. II Nr. 156/2021
	AL		
	NATION	BELGIUM	Long Term: 1000 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	AL		
	NATION	BULGARIA	Long Term: 1800 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	AL		
	NATION	GERMANY	Long Term: 1800 mg/m ³ - 1000 ppm Notes: DFG, 4(II) Source: TRGS 900
	AL		
	NATION	DENMARK	Long Term: 1800 mg/m ³ - 1000 ppm Source: BEK nr 2203 af 29/11/2021
	AL		
	NATION	SPAIN	Long Term: 1000 ppm (8h)
	AL		
	NATION	ESTONIA	Long Term: 1800 mg/m ³ - 1000 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	AL		
	NATION	FINLAND	Long Term: 1500 mg/m ³ - 800 ppm; Short Term: 2000 mg/m ³ - 1100 ppm Notes: liite 4 Source: HTP-ARVOT 2020
	AL		
	NATION	GREECE	Long Term: 1800 mg/m ³ - 1000 ppm Source: ΦΕΚ 94/Α` 13.5.1999
	AL		
	NATION	IRELAND	Notes: Asphx. Source: 2021 Code of Practice
	AL		

NATION LATVIA AL	Long Term: 1800 mg/m ³ - 1000 ppm Source: KN325P1
NATION NORWAY AL	Long Term: 900 mg/m ³ - 500 ppm Source: FOR-2021-06-28-2248
NATION POLAND AL	Long Term: 1800 mg/m ³ Source: Dz.U. 2018 poz. 1286
NATION ROMANIA AL	Long Term: 1400 mg/m ³ - 778 ppm; Short Term: 1800 mg/m ³ - 1000 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION SLOVENIA AL	Long Term: 1800 mg/m ³ - 1000 ppm; Short Term: 7200 mg/m ³ - 4000 ppm Source: UL št. 72, 11. 5. 2021
WEL- EH40	SWITZERLAN D Long Term: 1800 mg/m ³ - 1000 ppm (8h); Short Term: 7200 mg/m ³ - 4000 ppm (15min)
SUVA	SWITZERLAN D Long Term: 1800 mg/m ³ - 1000 ppm; Short Term: 7200 mg/m ³ - 4000 ppm Notes: Formel / Formal, NIOSH Source: suva.ch/valeurs-limites

Predicted No Effect Concentration (PNEC) values

4,4' diphenylmethanediisocyanate, isomere, homologue and mixtures

CAS: 9016-87-9 Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 1 mg/l
Exposure Route: Soil; PNEC Limit: 1 mg/kg
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 10 mg/l
Exposure Route: Fresh Water; PNEC Limit: 1 mg/l
Exposure Route: Marine water; PNEC Limit: 0.1 mg/l

Reaction products of phosphoryl trichloride and 2-methyloxirane

CAS: 1244733-77-4 Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 1 mg/l
Exposure Route: Soil; PNEC Limit: 1 mg/kg
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 10 mg/l
Exposure Route: Fresh Water; PNEC Limit: 1 mg/l
Exposure Route: Marine water; PNEC Limit: 1 mg/l

Dimethyl ether

CAS: 115-10-6 Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 160 mg/l
Exposure Route: Soil; PNEC Limit: 0.045 mg/kg
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 9 mg/l
Exposure Route: Fresh Water; PNEC Limit: 0.155 mg/l
Exposure Route: Marine water; PNEC Limit: 0.016 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 0.681 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 0.069 mg/kg

triethyl phosphate

CAS: 78-40-0 Exposure Route: Fresh Water; PNEC Limit: 632 mg/m³
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 9 mg/l
Exposure Route: Marine water; PNEC Limit: 63.2 mg/m³
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 298.5 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 5 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 500 µg/kg
Exposure Route: Soil; PNEC Limit: 640 µg/kg

Derived No Effect Level (DNEL) values

Reaction products of phosphoryl trichloride and 2-methyloxirane

CAS: 1244733-77-4 Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 2.91 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 8.2 mg/kg/day

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 2 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 0.52 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Consumer: 1.04 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Consumer: 1.45 mg/kg/day

Dimethyl ether

CAS: 115-10-6 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 1894 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Consumer: 471 mg/kg/day

triethyl phosphate

CAS: 78-40-0 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 9.9 mg/kg/day; Consumer: 1.74 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 2 mg/kg; Consumer: 1 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 1 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 5 mg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; EN 374:

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

Respiratory protection:

Gas filter and particle filter P2 . Gas filter type A

Thermal Hazards:

Not expected if used as intended

Environmental exposure controls:

Prevent the product from entering sewers or surface and underground water.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Pink
Odour:	N.A.
pH:	Not Relevant Notes: Not applicable, non-aqueous mixture
Kinematic viscosity:	Not Relevant Notes: Not determined, as it is not required for CLP classification
Melting point/freezing point:	N.A.
Boiling point or initial boiling point and boiling range:	-42 °C (-44 °F)
Flash point:	Not Applicable
Lower and upper explosion limit:	N.A.
Relative vapour density:	N.A.
Vapour pressure:	300.00 (kPa 50°C).

Density and/or relative density:	1.10 kg/m ³
Solubility in water:	N.A.
Solubility in oil:	Not Relevant Notes: Not determined, as it is not required for CLP classification
Partition coefficient n-octanol/water (log value):	Not Relevant Notes: Not applicable to mixtures
Auto-ignition temperature:	410.00 °C
Decomposition temperature:	N.A.
Flammability:	N.A.
Volatile Organic compounds - VOCs =	20.20%; 0.22g/L
Particle characteristics:	
Particle size:	N.A.

9.2. Other information

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

Avoid contact with oxidizing materials. The product could catch fire.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicological Information of the Preparation

a) acute toxicity	The product is classified: Acute Tox. 4(H332)
b) skin corrosion/irritation	The product is classified: Skin Irrit. 2(H315)
c) serious eye damage/irritation	The product is classified: Eye Irrit. 2(H319)
d) respiratory or skin sensitisation	The product is classified: Resp. Sens. 1B(H334), Skin Sens. 1(H317)
e) germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
f) carcinogenicity	The product is classified: Carc. 2(H351)
g) reproductive toxicity	Not classified Based on available data, the classification criteria are not met
h) STOT-single exposure	The product is classified: STOT SE 3(H335)
i) STOT-repeated exposure	The product is classified: STOT RE 2(H373)
j) aspiration hazard	Not classified Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

4,4'-diphenylmethanediisocyanate, isomere, homologue and mixtures

CAS: 9016-87-9	a) acute toxicity	ATE - Inhalation (Dust/mist): 1.5 mg/l LC50 Inhalation Mist Rat = 1.5 mg/l 4h ATE Aerosol inhalation = 11 mg/kg LC50 Inhalation Vapour Rat = 15 mg/l
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Reaction products of phosphoryl trichloride and 2-methyloxirane

CAS: 1244733-77-4 a) acute toxicity LD50 Oral Rat = 632

LD50 Skin Rat > 2000 mg/kg

LC50 Inhalation Rat > 7 mg/l 4h

Dimethyl ether

CAS: 115-10-6 a) acute toxicity

LD50 Oral > 2000 mg/kg

LD50 Skin > 2000 mg/kg

LC50 Inhalation Gas Rat = 164000 Ppm 4h

and isobutane

CAS: 75-28-5 a) acute toxicity

LD50 Oral > 2000 mg/kg

LD50 Skin > 2000 mg/kg

LC50 Inhalation Rat > 20000 mg/l

triethyl phosphate

CAS: 78-40-0 a) acute toxicity

LD50 Oral = 500 mg/kg

LD50 Skin > 2000 mg/kg

LC50 Inhalation = 20 mg/l

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

List of Eco-Toxicological properties of the components

Reaction products of phosphoryl trichloride and 2-methyloxirane

CAS: 1244733-77-4 a) Aquatic acute toxicity: LC50 Fish Danio rerio = 100 mg/L 96h

a) Aquatic acute toxicity: EC50 Daphnia magna = 131 mg/L 48h

a) Aquatic acute toxicity: EC50 Algae Pseudokirchneriella subcapitata = 82 mg/L 72h

b) Aquatic chronic toxicity: NOEC Daphnia magna = 32 mg/L

triethyl phosphate

CAS: 78-40-0 a) Aquatic acute toxicity: LC50 Fish ≤ 2400 mg/L 96h

a) Aquatic acute toxicity: LC50 Daphnia = 100 mg/L 96h

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT or vPvB substances present in concentration $\geq 0.1\%$

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

12.7. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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.

The product disposed of as such, pursuant to Regulation (EU) 1357/2014, must be classified as hazardous waste

A waste code according to the European List of Wastes (LoW) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Properties of waste which render it hazardous (Annex III, Directive 2008/98/EC):

N.A.

SECTION 14: Transport information

14.1. UN number or ID number

1950

14.2. UN proper shipping name

ADR-Shipping Name: AEROSOLS, flammable

IATA-Shipping Name: AEROSOLS, FLAMMABLE

IMDG-Shipping Name: AEROSOLS

14.3. Transport hazard class(es)

ADR-Class: 2

IATA-Class: 2.1

IMDG-Class: 2

14.4. Packing group

ADR-Packing Group: -

IATA-Packing group: -

IMDG-Packing group: -

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-D, S-U

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 2.1

ADR - Hazard identification number: -

ADR-Special Provisions: 190 327 344 625

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

ADR Limited Quantities: 1 L

ADR Excepted Quantities: E0

Air (IATA):

IATA-Passenger Aircraft: 203

IATA-Cargo Aircraft: 203

IATA-Label: 2.1

IATA-Subsidiary hazards: -

IATA-Erg: 10L

IATA-Special Provisions: A145 A167 A802

Sea (IMDG):

IMDG-Stowage and handling: SW1 SW22

IMDG-Segregation: SG69

IMDG-Subsidiary hazards: See SP63

IMDG-Special Provisions: 63 190 277 327 344 381 959

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EU) n. 2020/878

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2022/692 (ATP 18 CLP)
Regulation (EU) n. 2023/1434 (ATP 19 CLP)
Regulation (EU) n. 2024/197 (ATP 21 CLP)
Regulation (EU) n. 2024/2865

Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2023/707
Regulation (EU) n. 2023/1435 (ATP 20 CLP)
Regulation (EU) n. 2024/2564 (ATP 22 CLP)
Regulation (EU) n. 2025/1222 (ATP 23 CLP)

Regulation (EC) nr 648/2004 (Detergents).

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

- Restrictions related to the product: 3, 40
- Restrictions related to the substances contained: 74, 75

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
Product belongs to category: P3a	150	500

Explosives precursors – Regulation 2019/1148

No substances listed

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

German Water Hazard Class.

Class 3: extremely hazardous.

German Lagerklasse according to TRGS 510:

LGK 2B

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Code	Description
H220	Extremely flammable gas.
H222, H229	Extremely flammable aerosol. Pressurized container: may burst if heated.
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.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.2/1	Flam. Gas 1	Flammable gas, Category 1
2.3/1	Aerosols 1	Aerosol, Category 1
2.5	Press. Gas	Gases under pressure
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2

3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.1/1B	Resp. Sens. 1B	Respiratory Sensitisation, Category 1B
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.6/2	Carc. 2	Carcinogenicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/C3	Aquatic Chronic 3	Chronic (long term) aquatic hazard, category 3

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Aerosols 1, H222+H229	On basis of test data
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Resp. Sens. 1B, H334	Calculation method
Skin Sens. 1, H317	Calculation method
Carc. 2, H351	Calculation method
STOT SE 3, H335	Calculation method
STOT RE 2, H373	Calculation method

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

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

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

This MSDS cancels and replaces any preceding release.

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

ACGIH: American Conference of Governmental Industrial Hygienists

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

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

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

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

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

IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: Keep Away From Heat
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

- Safety Data Sheet
- SECTION 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 15: Regulatory information