

### Safety Data Sheet

according to the Hazardous Substances and New Organisms Act (1996) Issue date: 16/04/2025 Revision date: 16/04/2025

Supersedes: 09/12/2021

Version: 2.0

### **SECTION 1: Identification**

#### **1.1 Product identifier**

#### Trade name Product form Product code

CF ISO 500+ / CF ISO 750+ / CF-I 65 ECO / CF-I ECO + Mixture **BU Fire Protection Foam** 

Department issuing data specification sheet

product.compliance-fire.protection@hilti.com

#### 1.2 Other means of identification

No additional information available

#### 1.3 Recommended use of the chemical and restrictions on use

No additional information available

#### 1.4 Details of manufacturer or importer

#### Supplier

Hilti (New Zealand) Ltd. Level 1, Building B 600 South Road Ellerslie Auckland 1051 New Zealand T +64 9 571 9995 800 444 584 toll free - F +64 9526 7780 servicenz@hilti.com

#### 1.5. Emergency phone number

Emergency number

**GBK GmbH Global Regulatory Compliance** +49 (0)6132-84463

Hilti AG

Schaan 9494

Liechtenstein

T +423 234 2111

Feldkircherstraße 100

Country	Organisation/Company	Address	Emergency number
New Zealand	National Poisons Centre		0800 764 766

### **SECTION 2: Hazard identification**

2.1. Classification of the hazardous chemical	
HSNO Approval Number	HSR002517
Classification according to the Environmental Protect	tion Authority notices (EPA Hazardous Substances and New Organisms Act 1996)
Aerosol, Category 1	H222;H229
Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Respiratory sensitisation, Category 1	H334
Skin sensitisation, Category 1	H317
Carcinogenicity, Category 2	H351
Specific target organ toxicity – Single exposure, Categor	y 3, Respiratory H335



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2.2. GHS Label elements, including	precautionary statements
GHS NZ labelling	
Hazard pictograms (GHS NZ)	
Signal word (GHS NZ)	Danger
Contains	4,4'-diphenylmethanediisocyanate, isomeres and homologues (25 – 60 %); Reaction products of phosphoryl trichloride and 2-methyloxirane (10 – 25 %)
Hazard statements (GHS NZ)	H222 - Extremely flammable aerosol H229 - Pressurised container: May burst if heated
	H315 - Causes skin irritation
	H317 - May cause an allergic skin reaction
	H319 - Causes serious eve 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
Prevention	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.
	P260 - Do not breathe spray.
	P280 - Wear eye protection, protective clothing, protective gloves.
Storage	P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

#### 2.3. Other hazards which do not result in classification

No additional information available

### **SECTION 3: Composition and information on ingredients**

#### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	Conc.	Classification according to GHS NZ
4,4'-diphenylmethanediisocyanate, isomeres and homologues	CAS-No.: 9016-87-9	25 – 60	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
Reaction products of phosphoryl trichloride and 2- methyloxirane	CAS-No.: 13674-84-5	10 – 25	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Chronic 3, H412
Dimethyl ether (Propellant gas (Aerosol))	CAS-No.: 115-10-6	5 – 25	Flam. Gas 1, H220 Press. Gas (Comp.), H280 Flam. Gas 1A, H220



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Name	Product identifier	Conc.	Classification according to GHS NZ
propane (Propellant gas (Aerosol))	CAS-No.: 74-98-6	5 – 25	Flam. Gas 1A, H220 Press. Gas (Liq.), H280
isobutane (Propellant gas (Aerosol))	CAS-No.: 75-28-5	1 – 10	Flam. Gas 1A, H220 Press. Gas (Comp.), H280

SECTION 4: First-aid measures	
4.1. Description of necessary first-aid n	neasures
First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
First-aid measures after eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.
4.2. Symptoms caused by exposure	
Symptoms/effects after inhalation	Danger of serious damage to health by prolonged exposure through inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.
Symptoms/effects after skin contact	Causes skin irritation.
Symptoms/effects after eye contact	Causes serious eye irritation.
4.3. Medical attention and special treatment	nent
Other medical advice or treatment	Treat symptomatically.

SECTION 5: Fire-fighting measures	
5.1. Extinguishing media	
Suitable extinguishing media Unsuitable extinguishing media	Foam. Dry powder. Carbon dioxide. Water spray. Sand. Do not use a heavy water stream.
5.2. Specific hazards arising from the chem	ical
Fire hazard	Extremely flammable aerosol.
Explosion hazard	Pressurised container: May burst if heated.
Hazardous decomposition products in case of fire	Toxic fumes may be released. Vapours may form explosive mixture with air.
5.3. Special protective equipment and preca	autions for fire-fighters
Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures		
6.1. Personal precautions, protective equipment and emergency procedures		
No additional information available		
6.1.1. For non-emergency personnel		
Emergency procedures	Evacuate unnecessary personnel.	
6.1.2. For emergency responders		
Protective equipment	Equip cleanup crew with proper protection.	



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Collect spillage. Store away from other materials.      SECTION 7: Handling and storage      7.1. Precautions for safe handling      Precautions for safe handling    Keep away from heat, hot surfaces, sparks, open flames and other ignition source. Do not pierce or even after use. Obtain special instructions before use. Do not handle until all safet precautions have been read and understood. Wear personal protective equipment breathe spray. Use only outdoors or in a well-ventilated area. Avoid contact with si eyes. May form flammable/explosive vapour-air mixture. Wash hands and other exareas with mild soap and water before eating, drinking or smoking and when leavit Provide good ventilation in process area to prevent formation of vapour. Avoid bre dust/fume/gas/mist/vapours/spray.      Hygiene measures    Wash hands, forearms and face thoroughly after handling. Contaminated work clo should not be allowed out of the workplace. Wash contaminated clothing before recontainer tightly closed.      Storage conditions    Keep only in the original container in a cool, well ventilated place away from : Keep ontpainer tightly closed.      Incompatible products    Strong bases. Strong acids.	Emergency procedures	Ventilate area.
6.3. Methods and materials for containment and cleaning up      Methods for cleaning up    Soak up spills with inert solids, such as clay or diatomaceous earth as soon as por Collect spillage. Store away from other materials.      SECTION 7: Handling and storage      7.1. Precautions for safe handling      Precautions for safe handling      Keep away from heat, hot surfaces, sparks, open flames and other ignition source or even after use. Obtain special instructions before use. Do not handle until all safet precautions have been read and understood. Wear personal protective equipment breathe spray. Use only outdoors or in a well-ventilated area. Avoid contact with si eyes. May form flammable/explosive vapour-air mixture. Wash hands and other ear areas with mild soap and water before eating, drinking or smoking and when leavil Provide good ventilation in process area to prevent formation of vapour. Avoid bre dust/fume/gas/mist/vapours/spray.      Hygiene measures    Wash hands, forearms and face thoroughly after handling. Contaminated work clo should not be allowed out of the workplace. Wash contaminated clothing before re container tightly closed.      Storage conditions    Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.	6.2. Environmental precautions	
Methods for cleaning up    Soak up spills with inert solids, such as clay or diatomaceous earth as soon as por Collect spillage. Store away from other materials.      SECTION 7: Handling and storage      7.1. Precautions for safe handling      Precautions for safe handling      Keep away from heat, hot surfaces, sparks, open flames and other ignition source smoking. Do not spray on an open flame or other ignition source. Do not pierce or even after use. Obtain special instructions before use. Do not handle until all safet precautions have been read and understood. Wear personal protective equipment breathe spray. Use only outdoors or in a well-ventilated area. Avoid contact with s eyes. May form flammable/explosive vapour-air mixture. Wash hands and other exareas with mild soap and water before eating, drinking or smoking and when leavi Provide good ventilation in process area to prevent formation of vapour. Avoid bre dust/fume/gas/mist/vapours/spray.      Hygiene measures    Wash hands, forearms and face thoroughly after handling. Contaminated work clos should not be allowed out of the workplace. Wash contaminated clothing before re container tightly closed.      Storage conditions    Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.      Incompatible products    Strong bases. Strong acids.	Prevent entry to sewers and public waters. No	tify authorities if liquid enters sewers or public waters.
Collect spillage. Store away from other materials.      SECTION 7: Handling and storage      7.1. Precautions for safe handling      Precautions for safe handling    Keep away from heat, hot surfaces, sparks, open flames and other ignition source. Do not pierce or even after use. Obtain special instructions before use. Do not handle until all safet precautions have been read and understood. Wear personal protective equipment breathe spray. Use only outdoors or in a well-ventilated area. Avoid contact with si eyes. May form flammable/explosive vapour-air mixture. Wash hands and other exareas with mild soap and water before eating, drinking or smoking and when leavil Provide good ventilation in process area to prevent formation of vapour. Avoid bre dust/fume/gas/mist/vapours/spray.      Hygiene measures    Wash hands, forearms and face thoroughly after handling. Contaminated work clo should not be allowed out of the workplace. Wash contaminated clothing before re container tightly closed.      Storage conditions    Keep only in the original container in a cool, well ventilated place away from : Keep only in the original container in a cool, well ventilated place away from : Keep ontainer tightly closed.	6.3. Methods and materials for contai	nment and cleaning up
7.1. Precautions for safe handling    Keep away from heat, hot surfaces, sparks, open flames and other ignition source smoking. Do not spray on an open flame or other ignition source. Do not pierce or even after use. Obtain special instructions before use. Do not handle until all safet precautions have been read and understood. Wear personal protective equipment breathe spray. Use only outdoors or in a well-ventilated area. Avoid contact with s eyes. May form flammable/explosive vapour-air mixture. Wash hands and other exareas with mild soap and water before eating, drinking or smoking and when leavil Provide good ventilation in process area to prevent formation of vapour. Avoid bre dust/fume/gas/mist/vapours/spray.      Hygiene measures    Wash hands, forearms and face thoroughly after handling. Contaminated clothing before resonal not be allowed out of the workplace. Wash contaminated clothing before resonal not be allowed out of the workplace. Wash contaminated clothing before resonal products      Storage conditions    Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.      Incompatible products    Strong bases. Strong acids.	Methods for cleaning up	Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
Precautions for safe handling    Keep away from heat, hot surfaces, sparks, open flames and other ignition source or smoking. Do not spray on an open flame or other ignition source. Do not pierce or even after use. Obtain special instructions before use. Do not handle until all safet precautions have been read and understood. Wear personal protective equipment breathe spray. Use only outdoors or in a well-ventilated area. Avoid contact with si eyes. May form flammable/explosive vapour-air mixture. Wash hands and other exareas with mild soap and water before eating, drinking or smoking and when leavin Provide good ventilation in process area to prevent formation of vapour. Avoid bre dust/fume/gas/mist/vapours/spray.      Hygiene measures    Wash hands, forearms and face thoroughly after handling. Contaminated work clo should not be allowed out of the workplace. Wash contaminated clothing before reference to reference.      T.2. Conditions for safe storage, including any incompatibilities    Keep only in the original container in a cool, well ventilated place away from : Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.      Incompatible products    Strong bases. Strong acids.	SECTION 7: Handling and stora	age
smoking. Do not spray on an open flame or other ignition source. Do not pierce or      even after use. Obtain special instructions before use. Do not handle until all safet      precautions have been read and understood. Wear personal protective equipment      breathe spray. Use only outdoors or in a well-ventilated area. Avoid contact with si      eyes. May form flammable/explosive vapour-air mixture. Wash hands and other ex      areas with mild soap and water before eating, drinking or smoking and when leavin      Provide good ventilation in process area to prevent formation of vapour. Avoid bre      dust/fume/gas/mist/vapours/spray.      Hygiene measures      Wash hands, forearms and face thoroughly after handling. Contaminated work clo      should not be allowed out of the workplace. Wash contaminated clothing before re      container storage, including any incompatibilities      Storage conditions    Keep only in the original container in a cool, well ventilated place away from : Keep      container tightly closed.    Strong bases. Strong acids.	7.1. Precautions for safe handling	
7.2. Conditions for safe storage, including any incompatibilities      Storage conditions    Keep only in the original container in a cool, well ventilated place away from : Keep only in the original container tightly closed.      Incompatible products    Strong bases. Strong acids.		Wash hands, forearms and face thoroughly after handling. Contaminated work clothing
Storage conditions    Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.      Incompatible products    Strong bases. Strong acids.	7.2. Conditions for safe storage, inclu	
		Keep only in the original container in a cool, well ventilated place away from : Keep
Incompatible materials Sources of ignition Direct sunlight	Incompatible products	Strong bases. Strong acids.
oburces of ignition. Direct sumight.	Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature  5 – 25 °C    Heat and ignition sources  Keep away from heat and direct sunlight. Keep away from ignition sources.		

### SECTION 8: Exposure controls and personal protection

#### 8.1. Control parameters - exposure standards

Dimethyl ether (115-10-6)		
New Zealand - Occupational Exposure Limits		
Local name	Dimethylether	
WES-TWA (OEL TWA)	766 mg/m <sup>3</sup>	
	400 ppm	
WES-STEL (OEL STEL)	958 mg/m <sup>3</sup>	
	500 ppm	
Regulatory reference	Workplace Exposure Standards and Biological Exposure Indices, 13th Edition	
propane (74-98-6)		
New Zealand - Occupational Exposure Limits		
Local name	Propane	
Remark (NZ)	Simple asphyxiant – may present an explosion hazard	
Regulatory reference	Workplace Exposure Standards and Biological Exposure Indices, 13th Edition	



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#### Exposure limit values for the other components

No additional information available

#### 8.2. Monitoring methods

No additional information available

#### 8.3. Engineering controls

Appropriate engineering controls

Ensure good ventilation of the work station.

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

Personal protective equipment Hand protection Protective clothing. Safety glasses. Gloves. Avoid all unnecessary exposure. Wear suitable gloves tested to EN374. Suitable for short-term work or as a splash guard: Nitrile rubber gloves (> 0.1 mm). In case of permanent product contact:

exceeded: Wear appropriate mask. (e.g. gas filter type A1-P2 according to EN 14387)

Туре	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	>0,35mm		
Disposable gloves	Butyl rubber	6 (> 480 minutes)	>0,35mm		

Chemical goggles or safety glasses

Eye protection

Skin and body protection

Respiratory protection

Not necessary with sufficient ventilation. Ensure good ventilation of the work station. Open windows during application to ensure natural ventilation. If the occupational exposure limit is

Wear suitable protective clothing

Personal protective equipment symbol(s)



Environmental exposure controls Other information Avoid release to the environment. Do not eat, drink or smoke during use.

### **SECTION 9: Physical and chemical properties**

Physical state
Appearance
Colour
Odour
Odour threshold
рН
Evaporation rate
Relative evaporation rate (butylacetate=1)
Melting point / Freezing point
Boiling point
Flash point
Auto-ignition temperature
Flammability
Vapour pressure
Relative density
Density
Solubility

Partition coefficient n-octanol/water (Log Pow) Viscosity, dynamic Explosive properties Explosive limits Liquid Aerosol. Grey characteristic No additional information available No additional information available No additional information available No data available No additional information available No data available No data available No data available Extremely flammable aerosol. No additional information available No additional information available Density: 1.047 g/cm<sup>3</sup> Relative density: 1.047 No additional information available No data available No data available Pressurised container: May burst if heated. No additional information available



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Minimum ignition energy	
VOC content	

No data available 20.76 %

#### **SECTION 10: Stability and reactivity**

Reactivity Chemical stability Possibility of hazardous reactions Conditions to avoid Incompatible materials Hazardous decomposition products Extremely flammable aerosol. Pressurised container: May burst if heated. Not established. Direct sunlight. Extremely high or low temperatures. Strong acids. Strong bases. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological infor	mation
11.1. Toxicity	
Acute toxicity (oral) Acute toxicity (dermal) Acute toxicity (inhalation)	Not classified. Not classified Inhalation:dust,mist: Harmful if inhaled.
ATE NZ (dust, mist)	3 mg/l/4h
4,4'-diphenylmethanediisocyanate, iso	meres and homologues (9016-87-9)
LD50 oral rat	> 10000 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit, Literature study, Dermal)
LD50 dermal	9400 mg/kg
LC50 Inhalation - Rat	0.49 mg/l
propane (74-98-6)	
LC50 Inhalation - Rat [ppm]	> 800000 ppm (15 minutes, Rat, Male / female, Experimental value, Inhalation (gases))
isobutane (75-28-5)	
LC50 Inhalation - Rat [ppm]	> 800000 ppm (15 minutes, Rat, Male / female, Experimental value, Inhalation (gases))
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/irritation	Causes serious eye irritation.
Respiratory or skin sensitisation	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified
Carcinogenicity	Suspected of causing cancer.
Reproductive toxicity	Not classified
STOT-single exposure	May cause respiratory irritation.
4,4'-diphenylmethanediisocyanate, iso	meres and homologues (9016-87-9)
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
4,4'-diphenylmethanediisocyanate, iso	meres and homologues (9016-87-9)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not classified
CF ISO 500+ / CF ISO 750+ / CF-I 65 EC	:O / CF-I ECO +
Vaporizer	Aerosol



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12.1. Ecotoxicity    Not classified      Hazardous to the aquatic environment, short–term (acute)    Not classified      Hazardous to the aquatic environment, long–term (chronic)    Not classified      Soli toxicity    Not classified      Forrestrial vertebrate toxicity    Not classified      Terrestrial invertebrate toxicity    Not classified      4,4-diphenylmethanediisocyanate, isomers
Hazardous to the aquatic environment, short-term (acute)    Not classified      Hazardous to the aquatic environment, long-term    Not classified      Hazardous to the aquatic environment, long-term    Not classified      Soil toxicity    Not classified      Errestrial vertebrate toxicity    Not classified <b>4.4'-diphenyImethanediisocyanate, isomeres-thomologues (9016-87-9)</b> LC50 - Other aquatic organisms [1]    > 1000 mg/l (96 h, Literature study)      BCF - Fish [1]    268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)      Partition coefficient n-octanol/water (Log Pow)    10.46 (Calculated, KOWWIN)      Organic Carbon Normalized Adsorption Coefficient (Log Koc)    9.078 - 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)      LD50 dermal rabbit    > 5000 mg/kg (Rabbit, Literature study, Dermal)      LD50 oral rat    > 1000 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4100 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)
Hazardous to the aquatic environment, long-term (chronic)      Not classified        Soil toxicity      Not classified        Errestrial vertebrate toxicity      Not classified <b>4.4'-diphenyImethanediisocyanate, isomeres homologues (9016-87-9)</b> LC50 - Other aquatic organisms [1]      > 1000 mg/l (96 h, Literature study)        BCF - Fish [1]      268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)        Partition coefficient n-octanol/water (Log Pow)      10.46 (Calculated, KOWWIN)        Organic Carbon Normalized Adsorption Coefficient (Log Koc)      9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)        LD50 dermal rabbit      > 5000 mg/kg (Rabbit, Literature study, Dermal)        LD50 oral rat      > 10000 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)        EC50 - Crustacea [1]      > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)        Partition coefficient n-octanol/water (Log Pow)      0.1 (Experimental value)
(chronic)    Not classified      Soil toxicity    Not classified      Terrestrial vertebrate toxicity    Not classified      4.4'-diphenylmethanediisocyanate, isomeres → homologues (9016-87-9)      LC50 - Other aquatic organisms [1]    > 1000 mg/l (96 h, Literature study)      BCF - Fish [1]    268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)      Partition coefficient n-octanol/water (Log Pow)    10.46 (Calculated, KOWWIN)      Organic Carbon Normalized Adsorption Coefficient    9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)      LD50 dermal rabbit    > 5000 mg/kg (Rabbit, Literature study, Dermal)      LD50 oral rat    > 10000 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)
Solitoxicity      Not classified        Terrestrial vertebrate toxicity      Not classified        A4-diphenyImethanediisocyanate, isomeres      Homologues (9016-87-9)        LC50 - Other aquatic organisms [1]      > 1000 mg/l (96 h, Literature study)        BCF - Fish [1]      268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)        Partition coefficient n-octanol/water (Log Pow)      10.46 (Calculated, KOWWIN)        Organic Carbon Normalized Adsorption Coefficient (Log Koc)      9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)        LD50 dermal rabbit      > 5000 mg/kg (Rabbit, Literature study, Dermal)        LD50 oral rat      > 10000 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)        EC50 - Crustacea [1]      > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)        Partition coefficient n-octanol/water (Log Pow)      0.1 (Experimental value)
Terrestrial invertebrate toxicity    Not classified      4,4'-diphenyImethanediisocyanate, isomeres    Import to the aquatic organisms [1]    > 1000 mg/l (96 h, Literature study)      BC5 - 0 ther aquatic organisms [1]    > 1000 mg/l (96 h, Literature study)      BCF - Fish [1]    268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)      Partition coefficient n-octanol/water (Log Pow)    10.46 (Calculated, KOWWIN)      Organic Carbon Normalized Adsorption Coefficient (Log Koc)    9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)      LD50 dermal rabbit    > 5000 mg/kg (Rabbit, Literature study, Dermal)      LD50 oral rat    > 10000 mg/kg (Rat, Literature study, Oral)      Dimethyl ether (115-10-6)    24100 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, 48 h, Daphnia magna, 48 h, Daphnia magna, 5tatic system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)
4,4'-diphenylmethanediisocyanate, isomeres    homologues (9016-87-9)      LC50 - Other aquatic organisms [1]    > 1000 mg/l (96 h, Literature study)      BCF - Fish [1]    268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)      Partition coefficient n-octanol/water (Log Pow)    10.46 (Calculated, KOWWIN)      Organic Carbon Normalized Adsorption Coefficient (Log Koc)    9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)      LD50 dermal rabbit    > 5000 mg/kg (Rabbit, Literature study, Dermal)      LD50 oral rat    > 10000 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)
LC50 - Other aquatic organisms [1]    > 1000 mg/l (96 h, Literature study)      BCF - Fish [1]    268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)      Partition coefficient n-octanol/water (Log Pow)    10.46 (Calculated, KOWWIN)      Organic Carbon Normalized Adsorption Coefficient (Log Koc)    9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)      LD50 dermal rabbit    > 5000 mg/kg (Rabbit, Literature study, Dermal)      LD50 oral rat    > 10000 mg/kg (Rat, Literature study, Oral)      Dimethyl ether (115-10-6)    LC50 - Fish [1]      LC50 - Crustacea [1]    > 4100 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)
BCF - Fish [1]    268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)      Partition coefficient n-octanol/water (Log Pow)    10.46 (Calculated, KOWWIN)      Organic Carbon Normalized Adsorption Coefficient (Log Koc)    9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)      LD50 dermal rabbit    > 5000 mg/kg (Rabbit, Literature study, Dermal)      LD50 oral rat    > 10000 mg/kg (Rat, Literature study, Oral)      Dimethyl ether (115-10-6)    LC50 - Fish [1]      LC50 - Fish [1]    > 4100 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)
Partition coefficient n-octanol/water (Log Pow)    10.46 (Calculated, KOWWIN)      Organic Carbon Normalized Adsorption Coefficient (Log Koc)    9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)      LD50 dermal rabbit    > 5000 mg/kg (Rabbit, Literature study, Dermal)      LD50 oral rat    > 10000 mg/kg (Rat, Literature study, Oral)      Dimethyl ether (115-10-6)       LC50 - Fish [1]    > 4100 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)    9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)      LD50 dermal rabbit    > 5000 mg/kg (Rabbit, Literature study, Dermal)      LD50 oral rat    > 10000 mg/kg (Rat, Literature study, Oral)      Dimethyl ether (115-10-6)       LC50 - Fish [1]    > 4100 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)
(Log Koc)  > 5000 mg/kg (Rabbit, Literature study, Dermal)    LD50 dermal rabbit  > 5000 mg/kg (Rabbit, Literature study, Oral)    LD50 oral rat  > 10000 mg/kg (Rat, Literature study, Oral)    Dimethyl ether (115-10-6)
LD50 oral rat    > 10000 mg/kg (Rat, Literature study, Oral)      Dimethyl ether (115-10-6)
Dimethyl ether (115-10-6)      LC50 - Fish [1]    > 4100 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)      propane (74-98-6)
LC50 - Fish [1]    > 4100 mg/l (NEN 6504: Water - Determination of toxicity with Poecilia reticulata, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)      propane (74-98-6)
Poecilia reticulata, Semi-static system, Fresh water, Experimental value, Lethal)      EC50 - Crustacea [1]    > 4400 mg/l (NEN 6501: Water - Determination of toxicity with Daphnia magna, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)      propane (74-98-6)
Daphnia magna, Static system, Fresh water, Experimental value, Lethal)      Partition coefficient n-octanol/water (Log Pow)    0.1 (Experimental value)      propane (74-98-6)
propane (74-98-6)
Partition coefficient n-octanol/water (Log Pow) 1.1 – 2.8 (Experimental value, 20 °C)
isobutane (75-28-5)
Partition coefficient n-octanol/water (Log Pow) 1.09 – 2.8 (Experimental value, 20 °C)
12.2. Persistence and degradability
CF ISO 500+ / CF ISO 750+ / CF-I 65 ECO / CF-I ECO +
Persistence and degradability No additional information available
4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)
Not rapidly degradable
Persistence and degradability Not readily biodegradable in water.
Dimethyl ether (115-10-6)
Persistence and degradability Non degradable in the soil. Not readily biodegradable in water.
propane (74-98-6)
Not rapidly degradable
Persistence and degradability Readily biodegradable in water.
isobutane (75-28-5)
Not rapidly degradable
Persistence and degradability Readily biodegradable in water.



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### 12.3. Bioaccumulative potential

CF ISO 500+ / CF ISO 750+ / CF-I 65 ECO / CF-I ECO +				
Bioaccumulative potential	No additional information available			
4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)				
BCF - Fish [1]	268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)			
Partition coefficient n-octanol/water (Log Pow)	10.46 (Calculated, KOWWIN)			
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)			
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).			
Dimethyl ether (115-10-6)				
Partition coefficient n-octanol/water (Log Pow)	0.1 (Experimental value)			
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).			
propane (74-98-6)				
Partition coefficient n-octanol/water (Log Pow)	1.1 – 2.8 (Experimental value, 20 °C)			
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).			
isobutane (75-28-5)				
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 (Experimental value, 20 °C)			
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).			

#### 12.4. Mobility in soil

CF ISO 500+ / CF ISO 750+ / CF-I 65 ECO / CF-I ECO +			
Mobility in soil	No additional information available		
4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)			
Surface tension	No data available in the literature		
Partition coefficient n-octanol/water (Log Pow)	10.46 (Calculated, KOWWIN)		
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)		
Ecology - soil	Adsorbs into the soil.		
Dimethyl ether (115-10-6)	Dimethyl ether (115-10-6)		
Surface tension	No data available in the literature		
Partition coefficient n-octanol/water (Log Pow)	0.1 (Experimental value)		
Ecology - soil	Not applicable (gas).		
propane (74-98-6)			
Surface tension	No data available in the literature		
Partition coefficient n-octanol/water (Log Pow)	1.1 – 2.8 (Experimental value, 20 °C)		
Ecology - soil	Not applicable (gas).		
isobutane (75-28-5)			
Surface tension	No data available in the literature		
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 (Experimental value, 20 °C)		
Ecology - soil	Not applicable (gas).		



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### 12.5. Other adverse effects

Ozone Other adverse effects Not classified No additional information available

### **SECTION 13: Disposal considerations**

Waste treatment methods Product/Packaging disposal recommendations

Dispose of contents/container in accordance with licensed collector's sorting instructions. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Avoid release to the environment.

Ecological information

### **SECTION 14: Transport information**

ADR	IMDG	ΙΑΤΑ	ADN	RID
14.1. UN number or ID num	ber			
UN 1950	UN 1950	UN 1950	UN 1950	UN 1950
14.2. UN proper shipping n	ame			
AEROSOLS	AEROSOLS	Aerosols, flammable	AEROSOLS	AEROSOLS
Transport document descr	iption			
UN 1950 AEROSOLS, 2.1, (D)	UN 1950 AEROSOLS, 2.1	UN 1950 Aerosols, flammable, 2.1	UN 1950 AEROSOLS, 2.1	UN 1950 AEROSOLS, 2.1
14.3. Transport hazard clas	ss(es)			
2.1	2.1	2.1	2.1	2.1
				~
14.4. Packing group	L I			
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazaro	ls			
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary informatio	n available			1

#### 14.6. Special precautions for user

Overland transport	
Classification code (ADR)	5F
Special provisions (ADR)	190, 327, 344, 625
Limited quantities (ADR)	11
Packing instructions (ADR)	P207, LP02
Mixed packing provisions (ADR)	MP9
Transport category (ADR)	2
Tunnel restriction code (ADR)	D



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Transport by see	
Transport by sea	62 400 277 227 244 050
Special provisions (IMDG) Limited quantities (IMDG)	63, 190, 277, 327, 344, 959 SP277
	P207, LP02
Packing instructions (IMDG)	F-D
EmS-No. (Fire)	S-U
EmS-No. (Spillage)	
Stowage category (IMDG)	None
MFAG-No	126
Air transport	
PCA packing instructions (IATA)	203
PCA max net quantity (IATA)	75kg
CAO packing instructions (IATA)	203
Special provisions (IATA)	A145, A167, A802
	A145, A107, A002
Inland waterway transport	
Classification code (ADN)	5F
Special provisions (ADN)	19, 327, 344, 625
Limited quantities (ADN)	1 L
Excepted quantities (ADN)	E0
Equipment required (ADN)	PP, EX, A
Ventilation (ADN)	VE01, VE04
Number of blue cones/lights (ADN)	1
Rail transport	
Special provisions (RID)	190, 327, 344, 625
Limited quantities (RID)	1L
Packing instructions (RID)	P207, LP02

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

### **SECTION 15: Regulatory information**

15.1.	Safety, health and	environmental re	equiations specific	for the pro	duct in question

Hazardous Substances and New Organisms Act

HSNO Approval Number

HSR002517

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)			
Hazardous Substances and New Organisms Act			
HSNO Approval Number	HSR003222		
Dimethyl ether (115-10-6)			
Hazardous Substances and New Organisms Act			
HSNO Approval Number HSR000995			
propane (74-98-6)			
Hazardous Substances and New Organisms Act			

Hazardous Substances and New Organisms Act	
HSNO Approval Number	HSR001010



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isobutane (75-28-5)		
Hazardous Substances and New Organisms Act		
HSNO Approval Number HSR001003		
15.2. Chemical safety assessment		

No additional information available

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<b>SECTION 16: Other info</b>	rmation	
Issue date	16/04/2025	
Revision date	16/04/2025	
Supersedes	09/12/2021	

Indication of changes			
Section	Changed item	Change	Comments
3		Modified	

Full text of H-statements			
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4		
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4		
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4		
Aerosol 1	Aerosol, Category 1		
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3		
Carc. 2	Carcinogenicity, Category 2		
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2		
Flam. Gas 1	Flammable gases, Category 1		
Flam. Gas 1A	Flammable gases, Category 1A		
Press. Gas (Comp.)	Gases under pressure : Compressed gas		
Press. Gas (Liq.)	Gases under pressure : Liquefied gas		
Resp. Sens. 1	Respiratory sensitisation, Category 1		
Skin Irrit. 2	Skin corrosion/irritation, Category 2		
Skin Sens. 1	Skin sensitisation, Category 1		
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2		
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation		
H220	Extremely flammable gas		
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		



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Full text of H-statements		
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	

SDS\_NZ\_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.