CF 812 WD

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)
Issue date: 01/22/2025 Revision date: 01/22/2025 Supersedes: 04/19/2023 Version: 3.0

SECTION 1: Identification

1.1. Product identifier

Product form	Mixture
Trade name	CF 812 WD
Product code	BU Fire Protection Foam

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Supplier
Hilti (Canada) Corp.
2201 Bristol Circle
Suite 700
CA L6H 0J8 Oakville, Ontario
Canada
T +1905 8139200
1-800-363-4458 toll free, F +1 905 813 9009
ca-sales@hilti.com

Department issuing data specification sheet
Hilti AG
Feldkircherstraße 100
FL 9494 Schaan
Liechtenstein
T +423 234 2111
product.compliance-fire.protection@hilti.com

1.4. Emergency telephone number

Emergency number	Emergency CONTACT (24-Hour-Number) GBK/Infotrac ID 101022 (USA domestic) 1 800 535 5053 or international (001) 352 323 3500

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Flammable aerosols, Category 1	H222	Extremely flammable aerosol.
Acute toxicity (inhal.), Category 4	H332	Harmful if inhaled.
Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2	H319	Causes serious eye irritation.
Respiratory sensitisation, Category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation, Category 1	H317	May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351	Suspected of causing cancer.
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335	May cause respiratory irritation.
Specific target organ toxicity – Repeated exposure, Category 2	H373	May cause damage to organs through prolonged or repeated exposure.

Full text of H-statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS CA labelling

Hazard pictograms (GHS CA)

Signal word (GHS CA): Danger

Hazard statements (GHS CA):
H222 - Extremely flammable aerosol.
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 (GHS CA):
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.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
4,4'-diphenylmethanediisocyanate, isomeres and homologues	-	CAS-No.: 9016-87-9	10 – 40	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

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate	Diphenylmethane 4,4'-diisocyanate	CAS-No.: 101-68-8	10 – 40	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
Polymethylenepolyphenylisocyanate, proxylated glycerin polymer	-	CAS-No.: 57029-46-6	10 – 40	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))	dimethyl ether DEMEON D / dimethyl ether / dimethyl oxide / DYMEL A / ether, dimethyl / ether, methyl / methane, oxybis- / methyl ether / methyl oxide / oxibismethane / oxy-bis(methane) / oxybismethane / productcode 002D0808 / wood ether	CAS-No.: 115-10-6	5 – 10	Flam. Gas 1, H220 Press. Gas (Comp.), H280 Press. Gas (Diss.), H280

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
isobutane (Propellant gas (Aerosol))	isobutane 1,1-dimethylethane / A 31 (hydrocarbon) / hydrocarbon propellant A-31 / isobutane / isobutane (FAO) / isomethylethylmethane / methylpropane / petroleum gas / Product code 002D0326 / propane, 2-methyl- / R600a / trimethylmethane	CAS-No.: 75-28-5	1 – 5	Flam. Gas 1, H220 Press. Gas (Comp.), H280
propane (Propellant gas (Aerosol))	propane A 108 / dimethyl methane / ethylmethyl / hydrocarbon propellant A-108 / liquefied petroleum gas (=propane) / LPG (=propane) / LP-gas (=propane) / normal-propane / n-propane / petroleumgas (=propane) / productcode 002D0315 / propane / propane in gaseous state / propane, liquefied / propane, pur / propyl dihydride / propyl hydride / pyrogas	CAS-No.: 74-98-6	1 – 5	Flam. Gas 1, H220 Press. Gas (Liq.), H280

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
2,2'-methylenediphenyl diisocyanate	2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate 2,2'-methylenediphenyl diisocyanate / benzene, 1,1'-methylenebis[2-isocyanato-	CAS-No.: 2536-05-2	0.1 – 1	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

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

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. Most important symptoms and effects (acute and delayed)

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. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment: Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media: Foam. Dry powder. Carbon dioxide. Water spray. Sand.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media: Do not use a heavy water stream.

5.3. Specific hazards arising from the hazardous product

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.

5.4. Special protective equipment and precautions 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

6.2. 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 possible. Collect spillage. Store away from other materials.
Other information	Dispose of materials or solid residues at an authorized site. After curing, the product can be disposed of with household waste.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

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 sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. May form flammable/explosive vapour-air mixture. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing dust/fume/gas/mist/vapours/spray.
Hygiene measures	Wash hands, forearms and face thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

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 container tightly closed.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Heat and ignition sources	Keep away from heat and direct sunlight. Keep away from ignition sources.
Storage temperature	5 – 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Polymethylene polyphenyl isocyanate (PAPI)
OEL TWA	0.07 mg/m³
	0.005 ppm
Regulatory reference	Alberta Regulation 191/2021

Dimethyl ether (115-10-6)	
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Dimethyl ether
OEL TWA	1000 ppm
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)

isobutane (75-28-5)	
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Butane, all isomers: isobutane
OEL STEL	1000 ppm
Notations and remarks	EX (Substance is a flammable asphyxiant or excursions above the exposure limit could approach 10% of the lower explosive limit)
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Isobutane
OEL STEL	1000 ppm (EX - Explosion hazard)
Notations and remarks	TLV® Basis: CNS impair
Regulatory reference	ACGIH 2023
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Butane, all isomers
OEL STEL	1000 ppm
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Isobutane
OEL STEL	1000 ppm (EX - Explosion hazard)
Notations and remarks	TLV® Basis: CNS impair
Regulatory reference	ACGIH 2023
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Isobutane
OEL STEL	1000 ppm (EX - Explosion hazard)
Notations and remarks	TLV® Basis: CNS impair
Regulatory reference	ACGIH 2023
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Butane, All isomers
OEL TWA	1000 ppm
OEL STEL	1250 ppm
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)

isobutane (75-28-5)	
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Butane, All isomers
OEL TWA	1000 ppm
OEL STEL	1250 ppm
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-013-2020)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Butane, All isomers
OEL TWAEV	1000 ppm
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Isobutane
OEL STEL	1000 ppm (EX - Explosion hazard)
Notations and remarks	TLV® Basis: CNS impair
Regulatory reference	ACGIH 2023
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Butane. All isomers
OEL TWA	1000 ppm
OEL STEL	1250 ppm
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

propane (74-98-6)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Propane
OEL TWA	1000 ppm
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Propane
VEMP (OEL TWAEV)	1800 mg/m³
	1000 ppm
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Propane
Notations and remarks	Simple asphyxiant; EX (Substance is a flammable asphyxiant or excursions above the exposure limit could approach 10% of the lower explosive limit)
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)

propane (74-98-6)	
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Propane
Notations and remarks	TLV® Basis: Simple Asphyxiant
Regulatory reference	ACGIH 2023
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Propane
Notations and remarks	TLV® Basis: Simple Asphyxiant
Regulatory reference	ACGIH 2023
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Propane
Notations and remarks	TLV® Basis: Simple Asphyxiant
Regulatory reference	ACGIH 2023
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Propane
OEL TWA	1000 ppm
OEL STEL	1250 ppm
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Propane
OEL TWA	1000 ppm
OEL STEL	1250 ppm
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-013-2020)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Propane
Notations and remarks	See Appendix F: Minimal Oxygen Content
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Propane
Notations and remarks	TLV® Basis: Simple Asphyxiant
Regulatory reference	ACGIH 2023
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Propane
OEL TWA	1000 ppm
OEL STEL	1250 ppm
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (Diphenylmethane-4,4'-diisocyanate; MDI)
OEL TWA	0.05 mg/m³
	0.005 ppm
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Methylene bis(4-phenyl isocyanate) (MDI, 4,4'-Diphenylmethanediisocyanate)
VEMP (OEL TWAEV)	0.051 mg/m³
	0.005 ppm
Notations and remarks	EM, S
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (MDI)
OEL TWA	0.005 ppm
OEL C	0.01 ppm
Notations and remarks	S(R) (respiratory sensitization)
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (MDI)
OEL TWA	0.005 ppm
Notations and remarks	TLV® Basis: Resp sens
Regulatory reference	ACGIH 2023
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (MDI)
OEL TWA	0.005 ppm
Notations and remarks	TLV® Basis: Resp sens
Regulatory reference	ACGIH 2023
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (MDI)
OEL TWA	0.005 ppm
Notations and remarks	TLV® Basis: Resp sens
Regulatory reference	ACGIH 2023
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (MDI)
OEL TWA	0.005 ppm

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
OEL STEL	0.015 ppm
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (MDI)
OEL TWA	0.005 ppm
OEL STEL	0.015 ppm
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-013-2020)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Isocyanates, organic compounds - Methylene bisphenyl isocyanate (MDI)
OEL TWAEV	0.005 ppm
OEL C	0.02 ppm
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (MDI)
OEL TWA	0.005 ppm
Notations and remarks	TLV® Basis: Resp sens
Regulatory reference	ACGIH 2023
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Methylene bisphenyl isocyanate (MDI)
OEL TWA	0.005 ppm
OEL STEL	0.015 ppm
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.
Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Protective clothing. Safety glasses. Gloves. Avoid all unnecessary exposure.

Hand protection:

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:

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

Eye protection:
Chemical goggles or safety glasses

Skin and body protection:
Wear suitable protective clothing

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

Personal protective equipment symbol(s):

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aerosol.
Colour	Beige
Odour	slight ether-like odour
Odour threshold	No data available
pH	No data available
Relative evaporation rate (butylacetate=1)	No data available
Relative evaporation rate (ether=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	< -42 °C
Flash point	-104 °C
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Extremely flammable aerosol.
Vapour pressure	0.5 mPa mm hg (20°C/68°F)
Relative vapour density at 20°C	No data available
Relative density	No data available
Density	1 g/cm³
Relative gas density	1.7
Solubility	Not soluble in water alone.
Partition coefficient n-octanol/water (Log Pow)	No data available
Viscosity, kinematic	No data available
Explosive properties	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Explosive limits	Lower explosion limit: 0.4 vol % Upper explosion limit: 32 vol %

9.2. Other information

Heat of combustion	20 – 30 kJ/g NFPA 30B, Aerosol Classification Level: 2

SECTION 10: Stability and reactivity

Reactivity	Extremely flammable aerosol. Pressurised container: May burst if heated.
Chemical stability	Not established.
Possibility of hazardous reactions	Not established.
Conditions to avoid	Direct sunlight. Extremely high or low temperatures.
Incompatible materials	Strong acids. Strong bases.
Hazardous decomposition products	fume. Carbon monoxide. Carbon dioxide.
Hardening time:	No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Harmful if inhaled.

ATE CA (Gases)	4500 ppmv/4h
ATE CA (vapours)	11 mg/l/4h
ATE CA (dust,mist)	1.5 mg/l/4h

4,4'-diphenylmethanediisocyanate, isomeres 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

isobutane (75-28-5)	
LC50 Inhalation - Rat [ppm]	> 800000 ppm (15 minutes, Rat, Male / female, Experimental value, Inhalation (gases))

propane (74-98-6)	
LC50 Inhalation - Rat [ppm]	> 800000 ppm (15 minutes, Rat, Male / female, Experimental value, Inhalation (gases))

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
LD50 oral rat	> 2000 mg/kg
LD50 oral	31600 mg/kg
LD50 dermal rabbit	> 9400 mg/kg
LC50 Inhalation - Rat (Dust/Mist)	> 0.368 mg/l/4h

2,2'-methylenediphenyl diisocyanate (2536-05-2)	
LD50 oral rat	> 5000 mg/kg bodyweight (Rat, Read-across, Oral, 15 day(s))
LD50 dermal rabbit	> 9400 mg/kg bodyweight (24 h, Rabbit, Male / female, Read-across, Dermal, 14 day(s))
LC50 Inhalation - Rat	0.53 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Experimental value, Inhalation (dust))

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/irritation	Causes serious eye irritation.
Respiratory or skin sensitization	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.

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
IARC group	3 - Not classifiable

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
IARC group	3 - Not classifiable

Reproductive toxicity	Not classified
STOT-single exposure	May cause respiratory irritation.

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
STOT-single exposure	May cause respiratory irritation.

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
STOT-single exposure	May cause respiratory irritation.

Polymethylenepolyphenylisocyanate, proxylated glycerin polymer (57029-46-6)	
STOT-single exposure	May cause respiratory irritation.

2,2'-methylenediphenyl diisocyanate (2536-05-2)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Polymethylenepolyphenylisocyanate, proxylated glycerin polymer (57029-46-6)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

2,2'-methylenediphenyl diisocyanate (2536-05-2)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard	Not classified

CF 812 WD	
Vaporizer	Aerosol

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.

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short–term (acute)	Not classified
Hazardous to the aquatic environment, long–term (chronic)	Not classified

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
LC50 - Other aquatic organisms [1]	> 1000 mg/l (96 h, Literature study)

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)
EC50 96h - Algae [1]	154.9 mg/l (ECOSAR v1.00, Algae, QSAR, Estimated value)

isobutane (75-28-5)	
EC50 96h - Algae [1]	8.57 mg/l (ECOSAR v1.00, Algae, Fresh water, QSAR)

propane (74-98-6)	
EC50 96h - Algae [1]	12 mg/l (ECOSAR v1.00, Algae, Fresh water, QSAR)

2,2'-methylenediphenyl diisocyanate (2536-05-2)	
LC50 - Fish [1]	> 100 mg/l (96 h, Pisces, Fresh water, Read-across)
EC50 72h - Algae [1]	100 mg/l (Algae, Fresh water, Read-across)

12.2. Persistence and degradability

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.

isobutane (75-28-5)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable in water.

propane (74-98-6)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable in water.

2,2'-methylenediphenyl diisocyanate (2536-05-2)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
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)
Dimethyl ether (115-10-6)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Partition coefficient n-octanol/water (Log Pow)	0.1 (Experimental value)
isobutane (75-28-5)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 (Experimental value, 20 °C)
propane (74-98-6)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Partition coefficient n-octanol/water (Log Pow)	1.1 – 2.8 (Experimental value, 20 °C)
2,2'-methylenediphenyl diisocyanate (2536-05-2)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
BCF - Fish [1]	92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across)
Partition coefficient n-octanol/water (Log Pow)	5.22 (QSAR, KOWWIN)

12.4. Mobility in soil

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
Surface tension	No data available in the literature
Ecology - soil	Adsorbs into the soil.
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Dimethyl ether (115-10-6)	
Surface tension	No data available in the literature
Ecology - soil	Not applicable (gas).
isobutane (75-28-5)	
Surface tension	No data available in the literature
Ecology - soil	Not applicable (gas).
propane (74-98-6)	
Surface tension	No data available in the literature
Ecology - soil	Not applicable (gas).
2,2'-methylenediphenyl diisocyanate (2536-05-2)	
Surface tension	No data available in the literature

2,2'-methylenediphenyl diisocyanate (2536-05-2)	
Ecology - soil	Adsorbs into the soil.
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.5 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

12.5. Other adverse effects

Ozone — Not classified

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods — Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations — 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.

Ecological information — Avoid release to the environment.

SECTION 14: Transport information

In accordance with TDG / DOT / IMDG / IATA

TDG	DOT	IMDG	IATA
14.1. UN number			
Not applicable	Not applicable	1950	1950
14.2. Proper Shipping Name			
Not applicable	Not applicable	AEROSOLS	Aerosols, flammable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	2.1	2.1
Not applicable	Not applicable		
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Not applicable	Not applicable	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No
No supplementary information available			

14.6. Special precautions for user

TDG
Not applicable

DOT
Not applicable

IMDG

Special provisions (IMDG)	:	63, 190, 277, 327, 344, 959
Limited quantities (IMDG)	:	SP277
Packing instructions (IMDG)	:	P207, LP02
EmS-No. (Fire)	:	F-D - FIRE SCHEDULE Delta - FLAMMABLE GASES
EmS-No. (Spillage)	:	S-U - SPILLAGE SCHEDULE Uniform - GASES (FLAMMABLE, TOXIC OR CORROSIVE)
Stowage category (IMDG)	:	None
MFAG-No	:	126

IATA

PCA packing instructions (IATA)	:	203
PCA max net quantity (IATA)	:	75kg
CAO packing instructions (IATA)	:	203
Special provisions (IATA)	:	A145, A167, A802

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

CF 812 WD	
Canada DSL NDSL Flags	All components of this product are listed, or excluded from listing, on the Canadian Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

SECTION 16: Other information

Issue date	01-22-2025
Revision date	01-22-2025
Supersedes	04-19-2023

Indication of changes			
Section	**Changed item**	**Change**	**Comments**
2		Modified	
3.2		Modified	

Full text of H-statements:	
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
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.

Full text of H-statements:	
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_CA_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.