CFS-F FX / CP 660

Safety information for 2-Component-products

Issue date: 22/11/2024 Revision date: 22/11/2024 Supersedes: 17/10/2022 Version: 6.2

SECTION 1: Kit identification

1.1 Product identifier

Trade name CFS-F FX / CP 660

Product code BU Fire Protection

1.2 Details of the supplier of the Safety information for 2-Component-products

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

SECTION 2: General information

A SDS for each of these components is included. Please do not separate any component SDS from this cover page

SECTION 3:

Classification of the Product

2.1. Classification of the substance or mixture

HSNO Approval Number : HSR002625

Classification according to the Environmental Protection Authority notices (EPA Hazardous Substances and New Organisms Act 1996)

Acute toxicity (inhal.), 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, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity – Repeated exposure, Category 2	H373

2.2. Label elements

Hazard pictograms (GHS NZ)

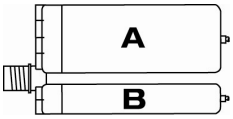
GHS07 GHS08

Signal word (GHS NZ)	Danger
Contains	4,4'-diphenylmethanediisocyanate, isomeres and homologues; Ethylenediamine, ethoxylated and propoxylated
Hazard statements (GHS NZ)	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 NZ)	P260 - Do not breathe vapours. P280 - Wear eye protection, protective clothing, protective gloves. P284 - In case of inadequate ventilation wear respiratory protection. P302+P352 - IF ON SKIN: Wash with plenty of water. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

2.3. Other hazards not contributing to the classification

No additional information available

Additional information



Name	General description	Quantity	Unit	Classification according to the United Nations GHS
CFS-F FX, A / CP 660, A		1	pcs (pieces)	Skin Sens. 1, H317
CFS-F FX, B / CP 660, B		1	pcs (pieces)	Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373

SECTION 4: General advice

General advice	For professional users only

SECTION 5: Safe handling advice

Environmental precautions	Avoid release to the environment
Storage conditions	Store in a well-ventilated place. Keep cool.
Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Wear personal protective equipment Do not breathe vapours. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes In case of inadequate ventilation wear respiratory protection.
Methods for cleaning up	Take up liquid spill into absorbent material Notify authorities if product enters sewers or public waters

SECTION 6: First aid measures

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	Call a poison center or a doctor if you feel unwell
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 with plenty of water/… If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing.
First-aid measures general	If you feel unwell, seek medical advice (show the label where possible)
Symptoms/effects after eye contact	Eye irritation
Symptoms/effects after inhalation	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	Irritation May cause an allergic skin reaction.
Other medical advice or treatment	Treat symptomatically

SECTION 7: Fire fighting measures

Protection during firefighting	Self-contained breathing apparatus Complete protective clothing
Hazardous decomposition products in case of fire	Toxic fumes may be released Carbon dioxide Carbon monoxide

SECTION 8: Other information

CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the Hazardous Substances and New Organisms Act (1996)

Issue date: 22/11/2024 Revision date: 22/11/2024 Supersedes: 17/10/2022 Version: 2.4

SECTION 1: Identification

1.1 Product identifier

Trade name	CFS-F FX, A / CP 660, A
Product form	Mixture
Product code	BU Fire Protection

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

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

1.5. Emergency phone number

Emergency number: GBK GmbH Global Regulatory Compliance
+49 (0)6132-84463

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: HSR002625

Classification according to the Environmental Protection Authority notices (EPA Hazardous Substances and New Organisms Act 1996)

Skin sensitisation, Category 1 H317

2.2. GHS Label elements, including precautionary statements

GHS NZ labelling

Hazard pictograms (GHS NZ)

Signal word (GHS NZ)	Warning
Contains	Ethylenediamine, ethoxylated and propoxylated (2,5 - <5 %)
Hazard statements (GHS NZ)	H317 - May cause an allergic skin reaction
Prevention	P280 - Wear eye protection, protective clothing, protective gloves.
Response	P302+P352 - IF ON SKIN: Wash with plenty of water.

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
Ethylenediamine, propoxylated	CAS-No.: 25214-63-5	2,5 - <5	Eye Irrit. 2, H319
Ethylenediamine, ethoxylated and propoxylated	CAS-No.: 26316-40-5	2,5 - <5	Eye Irrit. 2, H319 Skin Sens. 1, H317

SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.

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.

First-aid measures after eye contact: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

4.2. Symptoms caused by exposure

Symptoms/effects after skin contact: May cause an allergic skin reaction.

4.3. Medical attention and special treatment

Other medical advice or treatment: Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

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

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire: Toxic fumes may be released. Carbon monoxide. Carbon dioxide.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting: Self-contained breathing apparatus. Complete protective clothing.

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: Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment: For further information refer to section 8: "Exposure controls/personal protection". Use personal protective equipment as required.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up: Take up liquid spill into absorbent material.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep cool.

Storage temperature: 5 – 25 °C

SECTION 8: Exposure controls and personal protection

8.1. Control parameters - exposure standards

No additional information available

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: 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	Standard
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)

Environmental exposure controls: Avoid release to the environment.

SECTION 9: Physical and chemical properties

Physical state	Liquid
Appearance	No data available
Colour	red
Odour	Odour threshold is subjective and inadequate to warn for overexposure. Mixture contains one or more component(s) which have the following odour: Odourless Mild odour Characteristic odour odourless Almost odourless
Odour threshold	No additional information available
pH	Not determined
Evaporation rate	No additional information available
Relative evaporation rate (butylacetate=1)	No data available
Melting point / Freezing point	Melting point: Not applicable
Boiling point	No data available
Flash point	Not applicable.
Auto-ignition temperature	No data available
Flammability	Not applicable
Vapour pressure	No additional information available
Relative density	No additional information available
Density	Density: ≈ 1.17 g/cm³
Solubility	No additional information available
Partition coefficient n-octanol/water (Log Pow)	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Explosive limits	No additional information available
Minimum ignition energy	No data available

SECTION 10: Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reactions known under normal conditions of use.
Conditions to avoid	None under recommended storage and handling conditions (see section 7).
Incompatible materials	No additional information available
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Toxicity

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified

Ethylenediamine, ethoxylated and propoxylated (26316-40-5)	
LD50 oral rat	> 5000 mg/kg bodyweight
LD50 dermal rabbit	> 5000 mg/kg bodyweight

Skin corrosion/irritation	Not classified pH: Not determined
Serious eye damage/irritation	Not classified
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified

Aspiration hazard	Not classified

SECTION 12: Ecological information

12.1. Ecotoxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short–term (acute)	Not classified
Hazardous to the aquatic environment, long–term (chronic)	Not classified
Soil toxicity	Not classified
Terrestrial vertebrate toxicity	Not classified
Terrestrial invertebrate toxicity	Not classified

Ethylenediamine, propoxylated (25214-63-5)	
LC50 - Fish [1]	4500 mg/l Leuciscus idus (golden orfe)
EC50 72h - Algae [1]	35 mg/l
NOEC chronic crustacea	> 1 mg/l

Ethylenediamine, ethoxylated and propoxylated (26316-40-5)	
LD50 dermal rabbit	> 5000 mg/kg bodyweight
LD50 oral rat	> 5000 mg/kg bodyweight

12.2. Persistence and degradability

CFS-F FX, A / CP 660, A	
Persistence and degradability	No additional information available

12.3. Bioaccumulative potential

CFS-F FX, A / CP 660, A	
Bioaccumulative potential	No additional information available

12.4. Mobility in soil

CFS-F FX, A / CP 660, A	
Mobility in soil	No additional information available

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available

SECTION 13: Disposal considerations

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.
Additional information	packaging containing residues of or contaminated by dangerous substances. Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID /

ADR	IMDG	IATA	RID
14.1. UN number or ID number			
Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available			

14.6. Special precautions for user

Overland transport
No data available

Transport by sea
No data available

Air transport
No data available

Rail transport
No data available

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

Hazardous Substances and New Organisms Act
HSNO Approval Number HSR002625

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Issue date	22/11/2024
Revision date	22/11/2024
Supersedes	17/10/2022

CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the Hazardous Substances and New Organisms Act (1996)

Indication of changes			
Section	**Changed item**	**Change**	**Comments**
			general update

Abbreviations and acronyms

CAS-No. - Chemical Abstract Service number
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BLV - Biological limit value
BOD - Biochemical oxygen demand (BOD)
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL - Derived Minimal Effect level
DNEL - Derived-No Effect Level
EC-No. - European Community number
EC50 - Median effective concentration
ED - Endocrine disrupting properties
EN - European Standard
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IMDG - International Maritime Dangerous Goods
IOELV - Indicative Occupational Exposure Limit Value
LC50 - Median lethal concentration
LD50 - Median lethal dose
LOAEL - Lowest Observed Adverse Effect Level
N.O.S. - Not Otherwise Specified
NOAEC - No-Observed Adverse Effect Concentration
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
vPvB - Very Persistent and Very Bioaccumulative
WGK - Water Hazard Class
VOC - Volatile Organic Compounds
SDS - Safety Data Sheet
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
PNEC - Predicted No-Effect Concentration
PBT - Persistent Bioaccumulative Toxic
OEL - Occupational Exposure Limit
OECD - Organisation for Economic Co-operation and Development
COD - Chemical oxygen demand (COD)
ThOD - Theoretical oxygen demand (ThOD)
TRGS - Technical Rules for Hazardous Substances
TLM - Median Tolerance Limit
STP - Sewage treatment plant

Full text of H-statements	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation

CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the Hazardous Substances and New Organisms Act (1996)

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.

CFS-F FX, B / CP 660, B

Safety Data Sheet

according to the Hazardous Substances and New Organisms Act (1996)

Issue date: 22/11/2024 Revision date: 22/11/2024 Supersedes: 17/10/2022 Version: 2.4

SECTION 1: Identification

1.1 Product identifier

Trade name	CFS-F FX, B / CP 660, B
Product form	Mixture
Product code	BU Fire Protection

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

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

1.5. Emergency phone number

Emergency number: GBK GmbH Global Regulatory Compliance
+49 (0)6132-84463

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: HSR002625

Classification according to the Environmental Protection Authority notices (EPA Hazardous Substances and New Organisms Act 1996)

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, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity – Repeated exposure, Category 2	H373

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 (50 – 100 %); 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (20 – 40 %)
Hazard statements (GHS NZ)	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
Prevention	P260 - Do not breathe vapours. P280 - Wear eye protection, protective clothing, protective gloves. P284 - In case of inadequate ventilation wear respiratory protection.
Response	P302+P352 - IF ON SKIN: Wash with plenty of water. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER, a doctor.

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	50 – 100	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
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate	CAS-No.: 101-68-8	20 – 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

SECTION 4: First-aid measures

4.1. Description of necessary 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. Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
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 with plenty of water/…. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instruction on this label). If skin irritation or rash occurs:
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. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	Call a poison center or a doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Symptoms caused by exposure

Symptoms/effects after inhalation	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause an allergic skin reaction.
Symptoms/effects after skin contact	Irritation. May cause an allergic skin reaction. Causes skin irritation.
Symptoms/effects after eye contact	Eye irritation. Causes serious eye irritation.

4.3. Medical attention and special treatment

Other medical advice or treatment	Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray. Dry powder. Foam. Carbon dioxide. Sand.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	Toxic fumes may be released. Carbon dioxide. Carbon monoxide.

5.3. 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	Self-contained breathing apparatus. Complete protective clothing. 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	Ventilate spillage area. Do not breathe vapours. Avoid contact with skin and eyes. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	Use personal protective equipment as required. For further information refer to section 8: "Exposure controls/personal protection". Equip cleanup crew with proper protection.

Emergency procedures	Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up	Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not eat, drink or smoke when using this product. Avoid contact with skin and eyes. 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. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Obtain special instructions before use.
Hygiene measures	Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash hands, forearms and face thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Store in a well-ventilated place. Keep cool. 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.
Storage temperature	5 – 25 °C

SECTION 8: Exposure controls and personal protection

8.1. Control parameters - exposure standards

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
New Zealand - Occupational Exposure Limits	
Local name	Diphenylmethane diisocyanate (MDI, Methylene bisphenyl isocyanate) (Isocyanates)
WES-TWA (OEL TWA)	0.02 mg/m³
WES-STEL (OEL STEL)	0.07 mg/m³
Remark (NZ)	dsen (Dermal sensitiser); rsen (Respiratory sensitiser)
Regulatory reference	Workplace Exposure Standards and Biological Exposure Indices, 13th Edition
New Zealand - Biological Exposure Indices	
Local name	4,4-Methylene diphenyl diisocyanate (MDI, 4,4-Methylene bisphenyl isocyanate)
BEI	10 µg/g creatinine Parameter: 4,4-Diaminodiphenyl (following hydrolysis) - Medium: Urine - Sampling time: End of shift or end of exposure
Regulatory reference	Workplace Exposure Standards and Biological Exposure Indices, 13th Edition

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: Gloves. Protective clothing. Safety glasses. 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	Standard
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. ISO 16321-1. EN 170

Type	Field of application	Characteristics	Standard
Safety glasses	Droplet		EN 166, EN 170

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)

Environmental exposure controls: Avoid release to the environment.

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

SECTION 9: Physical and chemical properties

Physical state	Liquid
Appearance	No data available
Colour	amber
Odour	characteristic
Odour threshold	No additional information available
pH	No additional information available
Evaporation rate	No additional information available
Relative evaporation rate (butylacetate=1)	No data available
Melting point / Freezing point	Melting point: Not applicable
Boiling point	No data available
Flash point	> 200 °C
Auto-ignition temperature	No data available
Flammability	Not applicable,Non flammable.
Vapour pressure	Vapour pressure: 0.1 mbar
Relative density	No additional information available
Density	Density: 1.155 kg/l
Solubility	No additional information available
Partition coefficient n-octanol/water (Log Pow)	No data available
Viscosity, kinematic	299.766 mm²/s
Viscosity, dynamic	346.23 mPa·s
Explosive properties	No data available
Explosive limits	No additional information available

Minimum ignition energy	No data available

SECTION 10: Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions. Not established.
Possibility of hazardous reactions	No dangerous reactions known under normal conditions of use. Not established.
Conditions to avoid	None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.
Incompatible materials	Strong acids. Strong bases.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Toxicity

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Inhalation:dust,mist: Harmful if inhaled.

ATE NZ (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

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

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, 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.

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.
Aspiration hazard	Not classified

CFS-F FX, B / CP 660, B	
Viscosity, kinematic	299.766 mm²/s
Potential adverse human health effects and symptoms	Harmful if inhaled.

SECTION 12: Ecological information

12.1. Ecotoxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short–term (acute)	Not classified
Hazardous to the aquatic environment, long–term (chronic)	Not classified
Soil toxicity	Not classified
Terrestrial vertebrate toxicity	Not classified
Terrestrial invertebrate toxicity	Not classified
Other information	Avoid release to the environment.

4,4'-diphenylmethanediisocyanate, isomeres and 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/kg (Rat, Literature study, Oral)

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
LD50 dermal rabbit	> 9400 mg/kg
LD50 oral rat	> 2000 mg/kg

12.2. Persistence and degradability

CFS-F FX, B / CP 660, B	
Persistence and degradability	Not established.

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
Not rapidly degradable	
Persistence and degradability	Not readily biodegradable in water.

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
Not rapidly degradable	

12.3. Bioaccumulative potential

CFS-F FX, B / CP 660, B	
Bioaccumulative potential	Not established.

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).

12.4. Mobility in soil

CFS-F FX, B / CP 660, B	
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.

12.5. Other adverse effects

Ozone: Not classified
Other adverse effects: No additional information available

SECTION 13: Disposal considerations

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.
Additional information: packaging containing residues of or contaminated by dangerous substances. Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID /

ADR	IMDG	IATA	RID
14.1. UN number or ID number			
Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name			
Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)			
Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group			
Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards			
Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available			

14.6. Special precautions for user

Overland transport
Not regulated

Transport by sea
Not regulated

Air transport
Not regulated

Rail transport
Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

Hazardous Substances and New Organisms Act

HSNO Approval Number	HSR002625

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
Hazardous Substances and New Organisms Act	
HSNO Approval Number	HSR003222

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
Hazardous Substances and New Organisms Act	
HSNO Approval Number	HSR003218

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Issue date	22/11/2024
Revision date	22/11/2024
Supersedes	17/10/2022

Indication of changes

Section	Changed item	Change	Comments
			general update

Data sources: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Abbreviations and acronyms	CAS-No. - Chemical Abstract Service number ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road ATE - Acute Toxicity Estimate BCF - Bioconcentration factor BLV - Biological limit value BOD - Biochemical oxygen demand (BOD) CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 DMEL - Derived Minimal Effect level DNEL - Derived-No Effect Level EC-No. - European Community number EC50 - Median effective concentration ED - Endocrine disrupting properties EN - European Standard IARC - International Agency for Research on Cancer IATA - International Air Transport Association IMDG - International Maritime Dangerous Goods IOELV - Indicative Occupational Exposure Limit Value LC50 - Median lethal concentration LD50 - Median lethal dose LOAEL - Lowest Observed Adverse Effect Level N.O.S. - Not Otherwise Specified NOAEC - No-Observed Adverse Effect Concentration NOAEL - No-Observed Adverse Effect Level NOEC - No-Observed Effect Concentration vPvB - Very Persistent and Very Bioaccumulative WGK - Water Hazard Class VOC - Volatile Organic Compounds SDS - Safety Data Sheet RID - Regulations concerning the International Carriage of Dangerous Goods by Rail REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 PNEC - Predicted No-Effect Concentration PBT - Persistent Bioaccumulative Toxic OEL - Occupational Exposure Limit OECD - Organisation for Economic Co-operation and Development COD - Chemical oxygen demand (COD) ThOD - Theoretical oxygen demand (ThOD) TRGS - Technical Rules for Hazardous Substances TLM - Median Tolerance Limit STP - Sewage treatment plant
Other information	None.

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
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2

Full text of H-statements	
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
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

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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.