

CFS-F SOL; CP 620

Safety information for 2-Component-products

Date of issue: 19/12/2017

Revision date: 19/12/2017

Supersedes: 03/10/2016

Version: 7.0

SECTION 1: Kit identification

1.1 Product identifier

Trade name CFS-F SOL; CP 620



Product code BU Fire Protection

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

Hilti (Malaysia) Sdn. Bhd.
F-5-A, Sime Darby Brunfield Tower, No. 2, Jalan PJU 1A/7A
Oasis Square, Oasis Damansara
47301 Petaling Jaya, Selangor - Malaysia
T +60 3 5628 7222
; 1800 880 985 toll free - F +60 3 7848 7399

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

Classification according to the United Nations GHS (Rev. 4, 2011)

Acute Tox. 4 (Inhalation)	H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Resp. Sens. 1	H334
Skin Sens. 1	H317
Carc. 2	H351
Repr. 2	H361
STOT SE 3	H335
STOT RE 2	H373
Aquatic Chronic 3	H412

Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS-UN)



GHS07

GHS08

Signal word (GHS-UN)

Danger

Hazardous ingredients

4,4'-diphenylmethanediisocyanate, isomeres and homologues; zinc borate

Hazard statements (GHS-UN)

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.

CFS-F SOL; CP 620

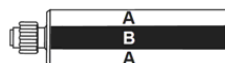
Safety information for 2-Component-products

Precautionary statements (GHS-UN)

H335 - May cause respiratory irritation.
 H351 - Suspected of causing cancer.
 H361 - Suspected of damaging fertility or the unborn child.
 H373 - May cause damage to organs through prolonged or repeated exposure.
 H412 - Harmful to aquatic life with long lasting effects.

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 doctor, a POISON CENTER.

Additional information



Name	General description	Quantity	Unit	Classification according to the United Nations GHS
CFS-F SOL / CP 620, B		1	pcs	Acute Tox. 4 (Inhalation), 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
CFS-F SOL / CP 620, A (RoW)		1	pcs	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Repr. 2, H361 Aquatic Chronic 3, H412

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.

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Safety information for 2-Component-products

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

No data available

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Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Date of issue: 19/12/2017

Version: 7.0

Revision date: 19/12/2017

Supersedes: 03/10/2016

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

1.1. Product identifier

Product form	Mixture
Trade name	CFS-F SOL / CP 620, A
Product code	BU Fire Protection

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

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier	Department issuing data specification sheet
Hilti (Malaysia) Sdn. Bhd. F-5-A, Sime Darby Brunfield Tower, No. 2, Jalan PJU 1A/7A Oasis Square, Oasis Damansara 47301 Petaling Jaya, Selangor - Malaysia T +60 3 5628 7222 ; 1800 880 985 toll free - F +60 3 7848 7399	Hilti AG Feldkircherstraße 100 9494 Schaan - Liechtenstein T +423 234 2111 chemicals.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +60 3 5628 7222 ; 1800 880 985 toll free
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS (Rev. 4, 2011)

Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Repr. 2	H361
Aquatic Chronic 3	H412

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

2.2. Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS-UN)



GHS07

GHS08

Signal word (GHS-UN)

Warning

Hazardous ingredients

hexaboron dizinc undecaoxide

Hazard statements (GHS-UN)

H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H361 - Suspected of damaging fertility or the unborn child.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (GHS-UN)

P280 - Wear eye protection, protective clothing, protective gloves.
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.

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according to the United Nations GHS (Rev. 4, 2011)

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
Ethylenediamine, propoxylated	(CAS-No.) 25214-63-5	25 - 40	Eye Irrit. 2A, H319
tris(2-chloro-1-methylethyl) phosphate	(CAS-No.) 13674-84-5	2.5 - 5	Acute Tox. 4 (Oral), H302
hexaboron dizinc undecaoxide	(CAS-No.) 12767-90-7	2.5 - 5	Repr. 2, H361 Aquatic Chronic 2, H411
2-(2-(2-Dimethylaminoethoxy)-ethyl-methyl-amino)ethanol	(CAS-No.) 83016-70-0	1 - 2.5	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Chronic 3, H412
Bis(2-dimethylaminoethyl) ether	(CAS-No.) 3033-62-3	0.1 - 1	Acute Tox. 3 (Dermal), H311 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	IF exposed or concerned: Get medical advice/attention.
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 occurs: Get medical advice/attention.
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.

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

Symptoms/effects after skin contact	Irritation.
Symptoms/effects after eye contact	Eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

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according to the United Nations GHS (Rev. 4, 2011)

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Protection during firefighting

Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information

Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Avoid contact with skin and eyes.

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 locked up. Store in a well-ventilated place. Keep cool.

Storage temperature

5 - 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls

Ensure good ventilation of the work station.

Environmental exposure controls

Avoid release to the environment.

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according to the United Nations GHS (Rev. 4, 2011)

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

Hand protection

Protective gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	3 (> 60 minutes)			EN 374

Eye protection

Type	Use	Characteristics	Standard
Safety glasses	Droplet		EN 166, EN 170

Skin and body protection

Wear suitable protective clothing

Respiratory protection

[In case of inadequate ventilation] wear respiratory protection.



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	red.
Odour	No data available
Odour threshold	No data available
pH	Not determined
Relative evaporation rate (butylacetate=1)	No data available
Melting point	Not applicable
Freezing point	No data available
Boiling point	No data available
Flash point	Not applicable.
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Not applicable
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	≈ 1.17 g/cm ³
Solubility	No data available
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

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according to the United Nations GHS (Rev. 4, 2011)

9.2. Other information

VOC content 15 mg/l EPA method 24 (CP 620, Comp. A + B)

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
LD50 oral rat	1150 - 1750 mg/kg bodyweight (Rat; Equivalent or similar to OECD 401; Experimental value; 1011-1824 mg/kg bodyweight; Rat; Experimental value)
LD50 oral	1150 - 1750
LD50 dermal rat	> 2000 mg/kg (Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg bodyweight (Rabbit; Experimental value; OECD 402: Acute Dermal Toxicity)

Bis(2-dimethylaminoethyl) ether (3033-62-3)	
LD50 oral rat	677 mg/kg bodyweight (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 603 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value; 708 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	0.406 (Rabbit; Experimental value; Equivalent or similar to OECD 402; 0.633; Rabbit; Experimental value; Equivalent or similar to OECD 402; 0.373; Rabbit; Experimental value; Equivalent or similar to OECD 402; 0.367; Rabbit; Experimental value; Equivalent or similar to OECD 402)

2-(2-(2-Dimethylaminoethoxy)-ethyl-methyl-amino)ethanol (83016-70-0)	
LD50 oral	1364 mg/kg

Skin corrosion/irritation	Causes skin irritation. pH: Not determined
Serious eye damage/irritation	Causes serious eye irritation. pH: Not determined
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified

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according to the United Nations GHS (Rev. 4, 2011)

Carcinogenicity	Not classified
Reproductive toxicity	Suspected of damaging fertility or the unborn child.
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	Harmful to aquatic life with long lasting effects.
Acute aquatic toxicity	Not classified
Chronic aquatic toxicity	Harmful to aquatic life with long lasting effects.

tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
LC50 fish 1	98 mg/l (96 h; Pimephales promelas; GLP)
EC50 Daphnia 1	65 - 335 mg/l (48 h; Daphnia magna; GLP)
LC50 fish 2	56.2 mg/l (96 h; Brachydanio rerio)
Threshold limit algae 1	73 mg/l (96 h; Selenastrum capricornutum; Growth rate)
Bis(2-dimethylaminoethyl) ether (3033-62-3)	
LC50 fish 1	131.2 mg/l (96 h; Danio rerio; GLP)
EC50 Daphnia 1	102 mg/l (48 h; Daphnia magna; GLP)
Threshold limit algae 1	24 mg/l (72 h; Pseudokirchneriella subcapitata; GLP)
Threshold limit algae 2	4.7 mg/l (72 h; Pseudokirchneriella subcapitata; GLP)
hexaboron dizinc undecaoxide (12767-90-7)	
LC50 fish 1	2.4 mg/l (LC50; 96 h)
EC50 Daphnia 1	76 mg/l (LC50; 48 h)

12.2. Persistence and degradability

tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available.
Bis(2-dimethylaminoethyl) ether (3033-62-3)	
Persistence and degradability	Not readily biodegradable in water. Adsorbs into the soil. Photolysis in the air.
hexaboron dizinc undecaoxide (12767-90-7)	
Persistence and degradability	Biodegradability: not applicable. Adsorbs into the soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

12.3. Bioaccumulative potential

tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
BCF fish 1	0.8 - 4.6 (Cyprinus carpio; Test duration: 6 weeks)
Log Pow	2.59 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Bis(2-dimethylaminoethyl) ether (3033-62-3)	
Log Pow	-0.339 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 20 °C; -0.54; Calculated)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
Log Pow	See section 12.1 on ecotoxicology
Bis(2-dimethylaminoethyl) ether (3033-62-3)	
Log Pow	See section 12.1 on ecotoxicology

12.5. Other adverse effects

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according to the United Nations GHS (Rev. 4, 2011)

Ozone Not classified
 Other adverse effects No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment 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.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	RID
14.1. UN number			
Not regulated for transport			
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
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

- Transport by sea

No data available

- Air transport

No data available

- Rail transport

Carriage prohibited (RID) No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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according to the United Nations GHS (Rev. 4, 2011)

SECTION 15: Regulatory information

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

No additional information available

SECTION 16: Other information

SDS Major/Minor	None
Date of issue	19/12/2017
Revision date	19/12/2017
Supersedes	03/10/2016

Indication of changes:

Section	Changed item	Change	Comments
2.2	Precautionary statements (GHS-UN)	Modified	

Full text of H-statements:

H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

SDS_UN_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 SOL / CP 620, B

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Date of issue: 19/12/2017

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

1.1. Product identifier

Product form	Mixture
Trade name	CFS-F SOL / CP 620, B
Product code	BU Fire Protection

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

No additional information available

1.3. Details of the supplier of the safety data sheet

Hilti (Malaysia) Sdn. Bhd.
F-5-A, Sime Darby Brunfield Tower, No. 2, Jalan PJU 1A/7A
Oasis Square, Oasis Damansara
47301 Petaling Jaya, Selangor - Malaysia
T +60 3 5628 7222
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Supplier

Hilti (Malaysia) Sdn. Bhd.
F-5-A, Sime Darby Brunfield Tower, No. 2, Jalan
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Department issuing data specification sheet

Hilti AG
Feldkircherstraße 100
9494 Schaan - Liechtenstein
T +423 234 2111
chemicals.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +60 3 5628 7222 ; 1800 880 985 toll free
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS (Rev. 4, 2011)

Acute Tox. 4 (Inhalation)	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

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

CFS-F SOL / CP 620, B

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

2.2. Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS-UN)



GHS07

GHS08

Signal word (GHS-UN)

Danger

Hazardous ingredients

4,4'-diphenylmethanediisocyanate, isomeres and homologues; 4,4'-methylenediphenyl diisocyanate, diphenylmethane-4,4'-diisocyanate

Hazard statements (GHS-UN)

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-UN)

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 doctor, a POISON CENTER.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
4,4'-diphenylmethanediisocyanate, isomeres and homologues	(CAS-No.) 9016-87-9	54 - 90	Acute Tox. 4 (Inhalation), 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
4,4'-methylenediphenyl diisocyanate, diphenylmethane-4,4'-diisocyanate	(CAS-No.) 101-68-8	27 - 54	Acute Tox. 4 (Inhalation), 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
tris(2-chloro-1-methylethyl) phosphate	(CAS-No.) 13674-84-5	5 - 10	Acute Tox. 4 (Oral), H302

Full text of H-statements: see section 16

CFS-F SOL / CP 620, B

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	IF exposed or concerned: Get medical advice/attention. 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 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	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.

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

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.
Symptoms/effects after eye contact	Eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Protection during firefighting Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information Dispose of materials or solid residues at an authorized site.

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Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.

Hygiene measures

Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. 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 locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Storage temperature

5 - 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

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, such as personal protective equipment (PPE)

Hand protection

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	3 (> 60 minutes)			EN 374

Eye protection

Type	Use	Characteristics	Standard
Safety glasses	Droplet		EN 166, EN 170

Skin and body protection

Wear suitable protective clothing

Respiratory protection

[In case of inadequate ventilation] wear respiratory protection.

Device	Filter type	Condition	Standard
	Filter AX (brown)		



8.4. Exposure limit values for the other components

No additional information available

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	amber.
Odour	No data available
Odour threshold	No data available
pH	No data available
Relative evaporation rate (butylacetate=1)	No data available
Melting point	Not applicable
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Not applicable
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	≈ g/cm ³
Solubility	No data available
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

VOC content 15 g/l EPA method 24 (CP 620, Comp. A + B)

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

ATE CLP (gases)	4500 ppmv/4h
ATE CLP (vapours)	11 mg/l/4h
ATE CLP (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)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit; Literature study)

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

tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
LD50 oral rat	1150 - 1750 mg/kg bodyweight (Rat; Equivalent or similar to OECD 401; Experimental value; 1011-1824 mg/kg bodyweight; Rat; Experimental value)
LD50 oral	1150 - 1750
LD50 dermal rat	> 2000 mg/kg (Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg bodyweight (Rabbit; Experimental value; OECD 402: Acute Dermal Toxicity)

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.
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Acute aquatic toxicity	Not classified
Chronic aquatic toxicity	Not classified

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)

tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
LC50 fish 1	98 mg/l (96 h; Pimephales promelas; GLP)
EC50 Daphnia 1	65 - 335 mg/l (48 h; Daphnia magna; GLP)
LC50 fish 2	56.2 mg/l (96 h; Brachydanio rerio)
Threshold limit algae 1	73 mg/l (96 h; Selenastrum capricornutum; Growth rate)

12.2. Persistence and degradability

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
Persistence and degradability	Not readily biodegradable in water. Hydrolysis in water. No (test)data on mobility of the

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	substance available.
tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available.

12.3. Bioaccumulative potential

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
BCF fish 1	1 (Pisces)
Bioaccumulative potential	Not bioaccumulative.
tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
BCF fish 1	0.8 - 4.6 (Cyprinus carpio; Test duration: 6 weeks)
Log Pow	2.59 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

tris(2-chloro-1-methylethyl) phosphate (13674-84-5)	
Log Pow	See section 12.1 on ecotoxicology

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment 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.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	RID
14.1. UN number			
Not regulated for transport			
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
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			

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14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Rail transport

Carriage prohibited (RID) No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

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

No additional information available

SECTION 16: Other information

SDS Major/Minor	None
Date of issue	19/12/2017
Revision date	19/12/2017
Supersedes	03/10/2016

Full text of H-statements:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

SDS_UN_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