

CF 162; CF-W 400

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

Danger

Hazardous ingredients

4,4'-diphenylmethanediisocyanate, isomeres and homologues

Hazard statements (CLP)

H222 - Extremely flammable aerosol
 H229 - Pressurised container: May burst if heated
 H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H319 - Causes serious eye irritation
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
 H351 - Suspected of causing cancer
 H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (CLP)

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
 P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

2.3. Other hazards

Adverse physicochemical, human health and environmental effects

Pressurised container: May burst if heated. Extremely flammable aerosol. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Harmful if inhaled. May cause respiratory irritation. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
tris(2-chloro-1-methylethyl) phosphate	(CAS No) 13674-84-5 (EC No) 237-158-7 (REACH-no) 01-2119447716-31	10 - 25	Acute Tox. 4 (Oral), H302
4,4'-diphenylmethanediisocyanate, isomeres and homologues	(CAS No) 9016-87-9	10 - 25	Carc. 2, H351 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317
Dimethyl ether substance with a Community workplace exposure limit substance with national workplace exposure limit(s) (DE)	(CAS No) 115-10-6 (EC No) 204-065-8 (EC Index No) 603-019-00-8	10 - 25	Flam. Gas 1, H220 Compressed gas, H280
ethanediol, ethylene glycol	(CAS No) 107-21-1 (EC No) 203-473-3	5 - 10	Acute Tox. 4 (Oral), H302 STOT RE 2, H373

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	(EC Index No) 603-027-00-1		
Isobutane substance with national workplace exposure limit(s) (DE)	(CAS No) 75-28-5 (EC No) 200-857-2 (EC Index No) 601-004-00-0	5 - 10	Flam. Gas 1, H220 Compressed gas, H280
Propane substance with national workplace exposure limit(s) (DE)	(CAS No) 74-98-6 (EC No) 200-827-9 (EC Index No) 601-003-00-5	1 - 2,5	Flam. Gas 1, H220 Compressed gas, H280

Full text of 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.
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

Fire hazard	Extremely flammable aerosol.
Explosion hazard	Pressurised container: May burst if heated.
Hazardous decomposition products in case of fire	Toxic fumes may be released. Vapours may form explosive mixture with air.

5.3. 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. No open flames, no sparks, and no smoking. Do not breathe 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".

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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Mechanically recover the product.
Other information	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

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. Pressurized container: 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. Avoid contact during pregnancy/while nursing. 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.
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. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Keep cool.
Storage temperature	5 - 25 °C
Heat and ignition sources	Keep away from heat and direct sunlight. Keep away from ignition sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)		
Germany	Local name	pMDI(alsMDIberechnet)
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	0,05 mg/m³
Germany	Remark (TRGS 900)	DFG,H,Sah,Y,12
ethanediol, ethylene glycol (107-21-1)		
EU	Local name	Ethylene glycol
EU	IOELV TWA (mg/m³)	52 mg/m³
EU	IOELV TWA (ppm)	20 ppm
EU	IOELV STEL (mg/m³)	104 mg/m³
EU	IOELV STEL (ppm)	40 ppm
EU	Notes	Skin
Germany	Local name	Ethandiol
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	26 mg/m³
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Germany	Remark (TRGS 900)	DFG,EU,H,Y
Dimethyl ether (115-10-6)		
EU	Local name	Dimethylether
EU	IOELV TWA (mg/m³)	1920 mg/m³
EU	IOELV TWA (ppm)	1000 ppm
Germany	Local name	Dimethylether
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	1900 mg/m³
Germany	TRGS 900 Occupational exposure limit value (ppm)	1000 ppm
Germany	Remark (TRGS 900)	DFG,EU

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Isobutane (75-28-5)		
Germany	Local name	Isobutan
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	2400 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	1000 ppm
Germany	Remark (TRGS 900)	DFG
Propane (74-98-6)		
Germany	Local name	Propan
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	1800 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	1000 ppm
Germany	Remark (TRGS 900)	DFG

8.2. Exposure controls

Appropriate engineering controls Ensure good ventilation of the work station.
 Personal protective equipment Gloves. Protective clothing. Safety glasses.
 Hand protection Protective gloves

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

Eye protection

Type	Use	Characteristics	Standard
Safety glasses			EN 166, EN 171

Skin and body protection Wear suitable protective clothing

Respiratory protection In case of inadequate ventilation wear respiratory protection

Device	Filter type	Condition	Standard
Aerosol mask	Filter AX (brown)		



Environmental exposure controls Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aerosol.
Colour	light blue.
Odour	characteristic. slight.
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	< 35 °C
Flash point	< 0 °C
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Extremely flammable aerosol
Vapour pressure	5500 - 6000 hPa
Relative vapour density at 20 °C	No data available

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Relative density	No data available
Density	< 1,3 g/cm ³
Solubility	No data available
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	Pressurised container: May burst if heated. In use, may form flammable/explosive vapour-air mixture.
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol. Pressurised container: May burst if heated.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Heating may cause a fire or explosion.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity Not classified

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)
ethanediol, ethylene glycol (107-21-1)	
LD50 oral rat	4700
Dimethyl ether (115-10-6)	
LC50 inhalation rat (mg/l)	309 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	164000 ppm/4h (Rat; Literature study)
Isobutane (75-28-5)	
LC50 inhalation rat (mg/l)	> 50 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	11000 ppm
Propane (74-98-6)	
LC50 inhalation rat (mg/l)	513 mg/l/4h (Rat; Literature)
LC50 inhalation rat (ppm)	280000 ppm/4h (Rat; Literature)
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;

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	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
Reproductive toxicity	Not classified
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not classified
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Vaporizer	Aerosol

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general May cause long lasting harmful effects to aquatic life.

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)
Dimethyl ether (115-10-6)	
LC50 fish 1	3082 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 1	756,2 mg/l (48 h; Daphnia magna)
LC50 fish 2	> 1000 mg/l (96 h; Pisces)
EC50 Daphnia 2	> 4400 mg/l (48 h; Daphnia magna)
Threshold limit algae 1	154,9 mg/l (96 h; Algae)
Isobutane (75-28-5)	
Threshold limit algae 1	1,07 mg/l (Algae)
Threshold limit algae 2	7,15 mg/l (72 h; Algae)
Propane (74-98-6)	
TLM fish 1	17.8 - 19.7,96 h; Pimephales promelas
Threshold limit algae 1	1.45 - 4.53,72 h; Algae
Threshold limit algae 2	8 mg/l (72 h; Algae)
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 substance available.
Dimethyl ether (115-10-6)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Not applicable (gas).
Isobutane (75-28-5)	
Persistence and degradability	Inherently biodegradable. Biodegradable in the soil. Not applicable (gas).
Propane (74-98-6)	
Persistence and degradability	Readily biodegradable in water. Not applicable (gas). Photodegradation in the air.
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

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4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
BCF fish 1	1 (Pisces)
Bioaccumulative potential	Not bioaccumulative.
Dimethyl ether (115-10-6)	
Log Pow	0,10 (Experimental value; 0,07; QSAR; KOWWIN; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Isobutane (75-28-5)	
BCF fish 1	20 - 52 (Pisces; QSAR)
BCF other aquatic organisms 1	20 - 52 (Daphnia magna; QSAR)
Log Pow	2,8 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Propane (74-98-6)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
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

Dimethyl ether (115-10-6)	
Surface tension	0,020 N/m (-40 °C)
Isobutane (75-28-5)	
Surface tension	0,014 N/m (-10 °C)
Propane (74-98-6)	
Surface tension	0,016 N/m (-47 °C)

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. 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.
Waste disposal recommendations	After curing, the product can be disposed of with household waste.
European List of Waste (LoW) code	08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances 08 05 01* - waste isocyanates

SECTION 14: Transport information

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






Other information No supplementary information available

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1950	1950	1950	1950	1950
14.2. UN proper shipping name				
AEROSOLS	AEROSOLS	Aerosols, flammable	AEROSOLS	AEROSOLS
Transport document description				
UN 1950 AEROSOLS, 2.1, (D)	UN 1950 AEROSOLS, 2.1			

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ADR	IMDG	IATA	ADN	RID
14.3. Transport hazard class(es)				
2.1	2.1	2.1	2.1	2.1
				
14.4. Packing group				
Not applicable	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	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

- Overland transport

Classification code (ADR) 5F
 Special provisions (ADR) 190, 327, 344, 625
 Limited quantities (ADR) 1l
 Packing instructions (ADR) P207, LP02
 Mixed packing provisions (ADR) MP9
 Tunnel restriction code (ADR) D

- Transport by sea

Special provisions (IMDG) 63, 190, 277, 327, 344, 959
 Limited quantities (IMDG) SP277
 Packing instructions (IMDG) P207, LP02
 EmS-No. (Fire) F-D
 EmS-No. (Spillage) S-U
 Stowage category (IMDG) None
 Stowage and segregation (IMDG) Protected from sources of heat For AEROSOLS with a maximum capacity of 1 litre: Category A. Segregation as for class 9 but 'Separated from' class 1 except division 1.4. For AEROSOLS with a capacity above 1 litre: Category B. Segregation as for the appropriate sub-division of class 2. For WASTE AEROSOLS: Category C. Clear of living quarters. Segregation as for the appropriate sub-division of class 2.
 MFAG-No 126

- Air transport

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

- Inland waterway transport

Classification code (ADN) 5F
 Special provisions (ADN) 19, 327, 344, 625
 Limited quantities (ADN) 1 L
 Excepted quantities (ADN) E0
 Equipment required (ADN) PP, EX, A
 Ventilation (ADN) VE01, VE04

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Number of blue cones/lights (ADN)	1
Carriage prohibited (ADN)	No
Not subject to ADN	No
- Rail transport	
Special provisions (RID)	190, 327, 344, 625
Limited quantities (RID)	1L
Packing instructions (RID)	P207, LP02
Carriage prohibited (RID)	No

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
 Contains no substance on the REACH candidate list
 Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

VwVwS Annex reference	Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 4)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aerosol 1	Aerosol, Category 1
Carc. 2	Carcinogenicity, Category 2
Compressed gas	Gases under pressure : Compressed gas
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Gas 1	Flammable gases, Category 1
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H220	Extremely flammable gas
H222	Extremely flammable aerosol
H229	Pressurised container: May burst if heated
H280	Contains gas under pressure; may explode if heated
H302	Harmful if swallowed
H315	Causes skin irritation

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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