

## 1 Identification

- Product identifier
- Trade name: CF-AS CJP; CF ISO 765; CF ISO 500+; CF-I ECO +; CS-F JS; CF 812 CC; CF-F ECO; CF-I 50 ECO GV; CF 125-50; CF 125-5W50; CF 126-N; CF 126; CF ISO 750; CF-I 750 B2 (-SV); CF 116-45; CF F 600; CF 116; CF-JI; CF 812; CF 812 WD; CF-I 65 ECO
- Relevant identified uses of the substance or mixture and uses advised against
- Sector of Use Building and construction work
- Application of the substance / the mixture
  - Assembly foam
  - Construction chemicals
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  - Hilti, Inc.
  - 5400 South 122nd East Ave.
  - US-Tulsa, OK 74146
  - Phone: (800) 879-8000
  - Fax: (800) 879-7000
  - Español: (800) 879-5000
- Information department:
  - see section 16
  - chemicals.hse@hilti.com
- Emergency telephone number:
  - Chem-Trec
  - Tel.: 1 800 424 9300
  - Tox Info Suisse - 24 h Service
  - Tel.: 0041 / 44 251 51 51 (international)

## 2 Hazard(s) identification

- Classification of the substance or mixture
  - Flam. Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurized container. May burst if heated.
  - Acute Tox. 4 H332 Harmful if inhaled.
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Eye Irrit. 2A H319 Causes serious eye irritation.
  - Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - Skin Sens. 1 H317 May cause an allergic skin reaction.
  - Carc. 2 H351 Suspected of causing cancer.
  - STOT SE 3 H335 May cause respiratory irritation.
  - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
- Classification according to Directive 67/548/EEC or Directive 1999/45/EC
  - Xn; Harmful
  - R20-40-48/20: Harmful by inhalation. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation.
  - Xn; Sensitising
  - R42/43: May cause sensitization by inhalation and skin contact.
  - Xi; Irritant
  - R36/37/38: Irritating to eyes, respiratory system and skin.
  - F+; Extremely flammable
  - R12: Extremely flammable.
- Information concerning particular hazards for human and environment:
  - The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
  - Warning! Pressurized container.

### Label elements

- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

### Hazard pictograms



GHS02



GHS07



GHS08

### Signal word Danger

- Hazard-determining components of labeling:
  - 4,4'-diphenylmethanediisocyanate, isomers and homologues

### Hazard statements

- H222-H229 Extremely flammable aerosol. Pressurized container. May burst if heated.
- H332 Harmful if inhaled.
- H315 Causes skin irritation.



Printing date 05/19/2015

# Safety Data Sheet

acc. to ISO 11014

Version number 5

Page 2/8

Reviewed on 05/19/2015

(Contd. of page 1)

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

## Precautionary statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P211 Do not spray on an open flame or other ignition source.
- P251 Pressurized container: Do not pierce or burn, even after use.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P302+P352 If on skin: Wash with plenty of water.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

## Classification system

### NFPA ratings (scale 0-4)



Health = 1  
Fire = 4  
Reactivity = 1

- Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

## 3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture consisting of the following components.

### Dangerous components:

9016-87-9	4,4'-diphenylmethanediisocyanate, isomers and homologues	Xn R20-40-48/20; Xn R42/43; Xi R36/37/38	>25%
13674-84-5	Tris(1-chloro-2-propyl)phosphate	Xn R22 R52/53	10-25%
75-28-5	isobutane	F+ R12	5-15%
106-97-8	butane, pure	F+ R12	5-15%
115-10-6	dimethyl ether	F+ R12	5-15%
74-98-6	propane liquefied	F+ R12	5-15%

- Additional information For the wording of the listed risk phrases refer to section 16.

## 4 First-aid measures

- Description of first aid measures
- General information
  - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation Supply fresh air; consult doctor in case of complaints.
- After skin contact Treat affected skin with cotton wool or cellulose. Then wash and rinse thoroughly with water and a mild cleaning agent.
- After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing
  - Rinse out mouth and then drink plenty of water.
  - Do not induce vomiting; immediately call for medical help.
- Information for doctor
- Most important symptoms and effects, both acute and delayed Allergic reactions
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

## 5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents Water with full jet.
- Special hazards arising from the substance or mixture
  - Formation of toxic gases is possible during heating or in case of fire.
  - Can form explosive gas-air mixtures.
- Advice for firefighters
- Protective equipment:
  - Wear self-contained respiratory protective device.
  - Mount respiratory protective device.

(Contd. on page 3)



Printing date 05/19/2015

## Safety Data Sheet

acc. to ISO 11014

Version number 5

Page 3/8

Reviewed on 05/19/2015

· Additional information Cool endangered receptacles with water spray.

(Contd. of page 2)

**6 Accidental release measures**

· Personal precautions, protective equipment and emergency procedures

Wear protective clothing.

Ensure adequate ventilation

Keep away from ignition sources

· Environmental precautions: Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Allow to solidify. Pick up mechanically.

Dispose contaminated material as waste according to item 13.

Do not flush with water or aqueous cleansing agents

· Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage**

· Handling

· Precautions for safe handling

Keep receptacles tightly sealed.

Store in cool, dry place in tightly closed receptacles.

Keep away from heat and direct sunlight.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

· Information about protection against explosions and fires:

Don't spray on a naked flames or any incandescent material

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Contents under pressure. Do not store in direct sunlight. Do not store above 100°F. Do not open or burn even after use.

· Conditions for safe storage, including any incompatibilities

· Storage

· Requirements to be met by storerooms and receptacles:

Store in a cool location.

Observe official regulations on storing packagings with pressurized containers.

· Information about storage in one common storage facility: Store away from foodstuffs.

· Further information about storage conditions:

Protect from heat and direct sunlight.

Store receptacle in a well ventilated area.

Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.

· Storage class 2 B

· Specific end use(s) No further relevant information available.

**8 Exposure controls/personal protection**

· Control parameters

· Components with limit values that require monitoring at the workplace:

75-28-5 isobutane

TLV Short-term value: 2370 mg/m<sup>3</sup>, 1000 ppm

106-97-8 butane, pure

REL Long-term value: 1900 mg/m<sup>3</sup>, 800 ppm

TLV Short-term value: 2370 mg/m<sup>3</sup>, 1000 ppm

115-10-6 dimethyl ether

WEEL Long-term value: 1000 ppm

74-98-6 propane liquefied

PEL Long-term value: 1800 mg/m<sup>3</sup>, 1000 ppm

REL Long-term value: 1800 mg/m<sup>3</sup>, 1000 ppm

TLV refer to Appendix F: minimal oxygen content

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

· Personal protective equipment

· General protective and hygienic measures

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Immediately remove all soiled and contaminated clothing

Do not inhale gases / fumes / aerosols.

(Contd. on page 4)

US

(Contd. of page 3)

- **Breathing equipment:**  
Not necessary if room is well-ventilated.  
Use suitable respiratory protective device in case of insufficient ventilation.
- **Recommended filter device for short term use:**  
Filter AX  
EN 371
- **Protection of hands:**



Protective gloves.

EN 374

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves** Nitrile rubber, NBR
- **Penetration time of glove material** Value for the permeation: Level  $\leq$  60
- **Eye protection:**



Tightly sealed goggles.

EN 166 + EN 170

- **Body protection:**



Protective work clothing.

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

##### · Appearance:

- Form: Aerosol
- Color: Different according to coloring
- Odor: Characteristic
- Odour threshold: Not determined.

- pH-value: Not determined.

#### · Change in condition

- Melting point/Melting range: Not determined.
- Boiling point/Boiling range:  $<35^{\circ}\text{C}$  ( $<95^{\circ}\text{F}$ )

- Flash point:  $<0^{\circ}\text{C}$  ( $<32^{\circ}\text{F}$ ) (DIN 53213)

- Flammability (solid, gaseous) Not applicable.

- Ignition temperature:  $235^{\circ}\text{C}$  ( $455^{\circ}\text{F}$ )

- Decomposition temperature: Not determined.

- Auto igniting: Product is not selfigniting.

- Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

#### · Explosion limits:

- Lower: 1.5 Vol %
- Upper: 11 Vol %

- Vapor pressure: Not determined

- Density: Not determined
- Relative density: Not determined.
- Vapour density: Not determined.
- Evaporation rate: Not applicable.

#### · Solubility in / Miscibility with

- Water: Not miscible or difficult to mix

- Partition coefficient (n-octanol/water): Not determined.

#### · Viscosity:

- dynamic: Not determined.
- kinematic: Not determined.

(Contd. on page 5)

(Contd. of page 4)

## Other information

CF 116 - VOC Content: 2.1 g/l (EPA Method 24)  
CF 812 - VOC Content: 2.4 g/l (EPA Method 24)  
CF-AS CJP - VOC Content: 0.012 g/l (EPA Method 24)

## 10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions  
Reacts with alcohols, amines, aqueous acids and alkalis  
Danger of bursting
- Conditions to avoid No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known

## 11 Toxicological information

## Information on toxicological effects

## Acute toxicity:

## LD/LC50 values that are relevant for classification:

9016-87-9 4,4'-diphenylmethanediisocyanate, isomeres and homologues

Oral LD50 &gt;5000 mg/kg (rat)

Inhalative LC50/4h 0.49 mg/l (rat)

13674-84-5 Tris(1-chloro-2-propyl)phosphate

Oral LD50 1150 - 1750 mg/kg (rat)

Dermal LD50 &gt;2000 mg/kg (rat)

Inhalative LC50/4h &gt;5 mg/l (rat)

74-98-6 propane liquefied

Inhalative LC50/4h 513 mg/l (rat)

115-10-6 dimethyl ether

Inhalative LC50/4h 308 mg/l (rat)

75-28-5 isobutane

Inhalative LC50/4h &gt;50 mg/l (rat)

106-97-8 butane, pure

Inhalative LC50/4h 658 mg/l (rat)

## Primary irritant effect:

· on the skin: Irritant to skin and mucous membranes.

· on the eye: Irritating effect.

## Sensitization:

Sensitization possible through inhalation.

Sensitization possible through skin contact.

## Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

## IARC (International Agency for Research on Cancer)

9016-87-9 4,4'-diphenylmethanediisocyanate, isomeres and homologues

3

## NTP (National Toxicology Program)

None of the ingredients is listed

## OSHA-Ca (Occupational Safety &amp; Health Administration)

None of the ingredients is listed.

## 12 Ecological information

## Toxicity

## Aquatic toxicity:

13674-84-5 Tris(1-chloro-2-propyl)phosphate

EC50/48h 65 - 335 mg/l (magna daphnia)

EC50/72h 45 mg/l (Algae)

EC50/96h 56.2 mg/l (fish)

9016-87-9 4,4'-diphenylmethanediisocyanate, isomeres and homologues

EC50/96h &gt;1000 mg/l (fish)

115-10-6 dimethyl ether

EC50/96h &gt;1000 mg/l (fish)

(Contd. on page 6)



Printing date 05/19/2015

## Safety Data Sheet

acc. to ISO 11014

Version number 5

Page 6/8

Reviewed on 05/19/2015

(Contd. of page 5)

### 74-98-6 propane liquefied

EC50/96h >1000 mg/l (fish)

- **Persistence and degradability** Based on previous experience, this product is inert and non-degradable.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** Does not accumulate in organisms
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
After curing, the product can be disposed of with household waste.  
Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations.

### · European waste catalogue:

08 04 09*	waste adhesives and sealants containing organic solvents or other dangerous substances
20 01 27*	paint, inks, adhesives and resins containing dangerous substances

- **Uncleaned packagings:**
- **Recommendation:**  
Dispose of packaging according to regulations on the disposal of packagings.  
Disposal must be made according to official regulations.

## 14 Transport information

· UN-Number	UN1950
· DOT, ADR, IMDG, IATA	
· UN proper shipping name	
· DOT	Aerosols, flammable
· ADR	1950 Aerosols
· IMDG	AEROSOLS
· IATA	AEROSOLS, flammable

### · Transport hazard class(es)

#### · DOT



· Class	2.1
· Label	2.1

#### · ADR



· Class	2 5F Gases
· Label	2.1

#### · IMDG, IATA



· Class	2.1
· Label	2.1

· Packing group	
· DOT, ADR, IMDG, IATA	Void

· Environmental hazards:	
· Marine pollutant:	No
· Special marking (ADR):	None
· Special marking (IATA):	None

(Contd. on page 7)

US



Printing date 05/19/2015

# Safety Data Sheet

acc. to ISO 11014

Version number 5

Page 7/8

Reviewed on 05/19/2015

(Contd. of page 6)

• Special precautions for user	Warning: Gases
• Danger code (Kemler):	Void
• EMS Number:	F-D,S-U
• Segregation groups	None
• Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
• Transport/Additional information:	
• IATA	
• Remarks:	Packing Instruction No. 203
• UN "Model Regulation":	UN1950, Aerosols, 2.1

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

- Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

- Section 313 (Specific toxic chemical listings):

9016-87-9 | 4,4'-diphenylmethanediisocyanate, isomeres and homologues

- TSCA (Toxic Substances Control Act):

All ingredients are listed.

- Proposition 65:

- Chemicals known to cause cancer:

None of the ingredients are listed.

- Cancerogenity categories

- EPA (Environmental Protection Agency)

9016-87-9 | 4,4'-diphenylmethanediisocyanate, isomeres and homologues

CBD

- TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

- MAK (German Maximum Workplace Concentration)

9016-87-9 | 4,4'-diphenylmethanediisocyanate, isomeres and homologues

4

- NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

- Chemical safety assessment: not required.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases

R12 Extremely flammable.

R20 Harmful by inhalation.

R22 Harmful if swallowed.

R36/37/38 Irritating to eyes, respiratory system and skin.

R40 Limited evidence of a carcinogenic effect.

R42/43 May cause sensitization by inhalation and skin contact.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

- Department issuing SDS:

Hilti Corporation

Business Unit Chemicals

Quality/Safety/Environment

FL-9494 Schaan / Liechtenstein

chemicals.hse@hilti.com

Tel.: +423 234 3004

FAX.: +423 234 3462

- Date of preparation / last revision 05/19/2015 / 4

- Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

(Contd. on page 8)

US



Printing date 05/19/2015

## Safety Data Sheet

acc. to ISO 11014

Version number 5

Page 8/8

Reviewed on 05/19/2015

(Contd. of page 7)

Flam. Aerosol 1: Flammable aerosols, Hazard Category 1  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A  
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1  
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1  
Car. 2: Carcinogenicity, Hazard Category 2  
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3  
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2  
- \* Data compared to the previous version altered.

US