

## 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 (Canada) Corp.  
2360 Meadowpine Boulevard  
Mississauga, Ontario L5N 6S2  
Phone: (800) 363-4458  
Fax: (800) 363-4459
- **Information department:**  
see section 16  
chemicals.hsc@hilti.com
- **Emergency telephone number:**  
Chem-Trec  
Tel.: 1 800 424 9300  
Schweizerisches Toxikologisches Informationszentrum - 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.  
Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Carc. 2 H351 Suspected of causing cancer.  
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.  
Acute Tox. 4 H332 Harmful if inhaled.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.  
Skin Sens. 1 H317 May cause an allergic skin reaction.  
STOT SE 3 H335 May cause respiratory irritation.
- **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**



- **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.  
H319 Causes serious eye irritation.

(Contd. of page 1)

- 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.

**Hazard description:**

**WHMIS classification**



A - Compressed gas



B5 - Flammable aerosol



D2A - Very toxic material causing other toxic effects

**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 R20-48/20; Xn R42/43; Xi R36/37/38 | >25%   |
| 13674-84-5 | Tris(1-chloro-2-propyl)phosphate                         | Xn R22<br>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%  |

· SVHC None

· **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.

(Contd. on page 3)

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents** CO2, 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.
- **Additional information** Cool endangered receptacles with water spray.

### 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:**

|                                  |                           |
|----------------------------------|---------------------------|
| <b>75-28-5 isobutane</b>         |                           |
| EV                               | Long-term value: 800 ppm  |
| <b>106-97-8 butane, pure</b>     |                           |
| EL                               | Short-term value: 750 ppm |
|                                  | Long-term value: 600 ppm  |
| EV                               | Long-term value: 800 ppm  |
| <b>115-10-6 dimethyl ether</b>   |                           |
| EL                               | Long-term value: 1000 ppm |
| <b>74-98-6 propane liquefied</b> |                           |
| EL                               | Long-term value: 1000 ppm |

(Contd. of page 3)

EV Long-term value: 1.000 ppm

· **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.

· **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 ≤ 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 °C (<95 °F)

· **Flash point:** <0 °C (<32 °F) (DIN 53213)

· **Flammability (solid, gaseous)** Not applicable.

· **Ignition temperature:** 235 °C (455 °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.

(Contd. on page 5)

(Contd. of page 4)

|  |  |
|--|--|
| · Evaporation rate                         | Not applicable.  |
| · Solubility in / Miscibility with Water:  | Not miscible or difficult to mix   |
| · Partition coefficient (n-octanol/water): | Not determined.  |
| · Viscosity:<br>dynamic:                   | Not determined.  |
| kinematic:                                 | Not determined.  |
| · Other information                        | CF 116 - VOC Content: 2.1 g/l (EPA Method 24)<br>CF 812 - VOC Content: 2.4 g/l (EPA Method 24)<br>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    | >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    | >2000 mg/kg (rat)       |
| Inhalative  | LC50/4h | >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 | >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

- Carcinogenic categories

|   |   |
|---|---|
| · 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 & Health Administration)

|                                    |
|------------------------------------|
| None of the ingredients is listed. |
|------------------------------------|

(Contd. on page 6)

## 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)

**74-98-6 propane liquefied**

EC50/96h &gt;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**
**DOT, TDG, IMDG, IATA**

UN1950

**UN proper shipping name**
**DOT**

Aerosols, flammable

**TDG**

1950 Aerosols

**IMDG**

AEROSOLS

**IATA**

AEROSOLS, flammable

**Transport hazard class(es)**
**DOT**

**Class**

2.1

**Label**


2.1

**TDG (Transport dangerous goods):**

**Class**

2 5F Gases

(Contd. of page 6)

|   |                             |
|---|-----------------------------|
| · Label   | 2.1                         |
| · IMDG, IATA  |                             |
|  |                             |
| · Class   | 2.1                         |
| · Label   | 2.1                         |
| · Packing group   |                             |
| · DOT, TDG, IMDG, IATA  | Void                        |
| · Environmental hazards:  |                             |
| · Marine pollutant:   | No                          |
| · Special marking (TDG):  | None                        |
| · Special marking (IATA):   | None                        |
| · 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 313 (Specific toxic chemical listings):

9016-87-9 | 4,4'-diphenylmethanediisocyanate, isomers 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, isomers 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, isomers 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.

· Department issuing MSDS:

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 04/02/2015 / 4

· Abbreviations and acronyms:

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

(Contd. on page 8)



(Contd. of page 7)

ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
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  
Carc. 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.

CA