1. Identification of Substance & Company

Company Details:
Hilti (New Zealand) Ltd
Unit 1/B, 525 Great South Rd
Penrose
Auckland, 1061
PO Box 112- 030, Penrose
Ph 09 526 7783 (between 7-30 AM and 6-30 PM)
EMERGENCY TELEPHONE NUMBER
0800 623 000 (National Poisons Centre)

Product

Product name	CFR 1
Other names	CFR 1 Cleaner
HSNO approval	HSR002515, Aerosols (Flammable) Group Standard 2006
Approval description	Aerosols (Flammable) Group Standard 2006
UN number	1950
Proper Shipping Name	AEROSOL
Packaging group	NA
Hazchem code	1T (recommended)
Uses	Cleaner

2. Hazard Identification

Approval

This product has been approved under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002515, Aerosols (Flammable) Group Standard 2006), and is classified as follows:

Classes	Hazard Statements
2.1.2A	Extremely flammable aerosol.
6.1E (oral)	May be harmful if swallowed
6.3B	Causes mild skin irritation.
6.4A	Causes eye irritation.

SYMBOLS

DANGER

Other Classifications

There are no other Classifications that are known to apply.

Precautionary Statements

Read label before use.
Keep out of reach of children.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.*
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Wash hands thoroughly after handling.
Wear eye/face protection."
Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

* These precautionary statements apply when a flammable zone is required to be established.
See Section 15 – Regulatory Information

Further precautionary statements can be found in Section 4 – First Aid.

3. Composition / Information on Ingredients

Component	CAS/ Identification	Class for ingredient(s)	Conc (%)
acetone	67-64-1	3.1B, 6.1E (oral), 6.3B, 6.4A	25-50%
propan-2-ol	67-63-0	3.1B, 6.1E (oral), 6.3B, 6.4A	25-50%
butane	106-97-8	2.1.1A	25-50%

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

4. First Aid

General Information

You should call the National Poisons Centre if you feel that you may have been harmed or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service). If medical advice is needed, have product container or label at hand. IF exposed or concerned: Get medical advice.

Recommended first aid facilities Ready access to running water is required. Accessible eyewash is required.

Exposure

Swallowed If medical advice is needed, have product container or label at hand. Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting. Give a glass of water to drink. Contact a doctor.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. If eye irritation persists: Get medical advice.

Skin contact IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention. Take off contaminated clothing and wash before re-use.

Inhaled IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a doctor if you feel unwell. If coughing, headache, dizziness, drowsiness or shortness of breath is experienced, remove the patient to fresh air immediately. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor. Danger: condition may deteriorate with alcohol consumption.

Advice to Doctor

Treat symptomatically

5. Firefighting Measures

Fire and explosion hazards: This product is considered a flammable aerosol. This product has the potential to cause fire or to create an additional hazard during fire. May form explosive gas-air mixtures.

Suitable extinguishing substances: Carbon dioxide, extinguishing powder, water jets. Extinguish larger fires with water jet or alcohol-resistent foam.

Unsuitable extinguishing substances: Water with full water jet.

Products of combustion: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.

Protective equipment: Self-contained breathing apparatus. Safety boots, non-flammable overalls, gloves, hat and eye protection. Do not inhale explosion gases or combustion gases.

Hazchem code: 1T (recommended)

6. Accidental Release Measures

Containment If greater than *3000 L* is stored, secondary containment and emergency plans to manage any potential spills must be in place. Prevent spillage from spreading or entering soil, waterways or drains.

Emergency procedures The container size and type will generally prevent a major spill.
In the event of a large spillage (>100kg) alert the fire brigade to location and give brief description of hazard.
Shut off all possible sources of ignition.
Wear protective equipment to prevent skin, eye and respiratory exposure.
Clear area of any unprotected personnel.
Contain using sand, earth or vermiculite.
Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your regional council immediately)

Clean-up method Use absorbent (soil, sand or other inert material). Rags are not recommended for the clean-up of spills, as they may create fire or environmental hazard.

	Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.
Disposal	Mop up and collect recoverable material into labelled containers for recycling or salvage. Recycle containers wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with all regulations.
Precautions	Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation.

7. Storage & Handling

Storage	Danger of bursting! Ensure good ventilation/extraction in the workplace. Avoid storage of harmful substances with food. Containers should be kept dry and closed at 5 – 25°C. Keep from extreme heat and open flames. Avoid contact with incompatible substances as listed in Section 10 and flammable substances. Hazardous atmosphere zones and location test certificates must be established if storing greater than 3000 L. Containers must bear the prescribed labelling, including the Hazchem code, UN number, flammability warning and name of contents. **Keep out of reach of children.**
Handling	Beware: container is pressurized. Keep away from direct sun exposure and temperatures over 50°C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects Keep ignition sources away – do not smoke Without adequate ventilation formation of explosive mixtures is possible. See section 8 with regard to personal protective equipment requirements.

8. Exposure Controls / Personal Protective Equipment

Workplace Exposure Standards

A workplace exposure standard (WES) has not been established by the WorkSafe NZ for this product. There is a general limit of 10mg/m^3 for dusts and mists when limits have not otherwise been established.

	Ingredient	WES-TWA	WES-STEL
NZ Workplace Exposure Stds (2013)	acetone	500ppm, 1185mg/m^3	1000ppm, 2375 mg/m^3
	propan-2-ol	400ppm, 983mg/m^3	500ppm, 1230mg/m^3
	butane	800ppm 1900mg/m^3	no data

Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety in Employment Act 1992 (HSE). Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

Personal Protective Equipment

Eyes

Avoid contact with eyes. Use safety glasses and or chemical splash goggles if splashes are possible.

Skin

Avoid repeated or prolonged skin contact. Wear overalls, rubber boots and impervious gloves, e.g. PVA, Nitrile or Neoprene. Natural rubber gloves are NOT recommended. Replace frequently. Gloves should be checked for tears or holes before use.

Respiratory

A respirator when airborne concentrations approach the WES (section 8). Use an organic vapour cartridge. If using a respirator, ensure that the are in good working order and that the respirator is fitted to ensure effective seal and comfort. If very high exposures are possible, self-contained breathing apparatus should be considered.

WES Additional Information

Not applicable

9. Physical & Chemical Properties

Appearance	Aerosol containing colourless liquid
Odour	Acetone like
pH	no data
Vapour pressure	2.5-2.9 bar
Viscocity	no data
Boiling point	no data
Volatile materials	no data
Freezing / melting point	no data
Solubility	partly soluble in water
Specific gravity / density	no data
Flash point	Aerosol
Danger of explosion	product is not explosive, however formation of explosive air/steam mixtures is possible
Auto-ignition temperature	230 degC
Upper & lower flammable limits	LFL=1.5%, UFL=13.0%
Corrosiveness	Non corrosive

10. Stability & Reactivity

Stability	Stable
Conditions to be avoided	Flammable substance. Keep away from sources of ignition at all times. Containers should be kept closed in order to avoid contamination.
Incompatible groups	Aerosols are incompatible with explosives, flammable liquids/ solids, oxidising materials.
Substance Specific Incompatibility	none known
Hazardous decomposition products	Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen, and under some circumstances, oxides of nitrogen. Water.
Hazardous reactions	none known

11. Toxicological Information

Summary

IF SWALLOWED: may be harmful. Solvent is considered an aspiration hazard. Unlikely route of exposure (aerosol).
IF IN EYES: may be irritating to the eyes.
IF ON SKIN: may cause skin irritation through defatting of the skin, resulting in cracking and dryness.
IF INHALED: vapours may cause light headedness, dizziness, nausea. Impacts are increased with exposure to other chemicals, including alcohol.

CHRONIC TOXICITY: long term health effects may be possible with frequent, ongoing use of organic solvents (similar to alcohol abuse)

Supporting Data

Acute	**Oral**	Using LD_{50}'s for ingredients, the calculated LD_{50} (oral, rat) for the mixture is between 2000 and 5,000 mg/kg. Data considered includes: Acetone 3000 mg/kg (mouse), propan-2-ol 3600 mg/kg (mouse). The solvents may be an aspiration hazard.
	Dermal	None of the ingredients are considered toxic by dermal contact.
	Inhaled	Using LC_{50}'s for ingredients, the calculated LC_{50} (inhalation, rat) for the mixture is >5,000 ppm. Data considered includes: butane LC_{50} (Inhalation): 658 g/m^3/4 hours (rat).
	Eye	The mixture is considered to be an eye irritant, because some of the ingredients present are considered eye irritants in more concentrated form.
	Skin	The mixture is considered to be a skin irritant, because some of the ingredients present are considered skin irritants in more concentrated form.
Chronic	**Sensitisation**	No ingredient present at concentrations > 0.1% is considered a sensitizer.
	Mutagenicity	No ingredient present at concentrations > 0.1% is considered a mutagen.
	Carcinogenicity	No ingredient present at concentrations > 0.1% is considered a carcinogen.
	Reproductive / Developmental	No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation.
	Systemic	No ingredient present at concentrations > 1% is considered a target organ toxicant.
	Aggravation of existing conditions	None known.

12. Ecological Data

Summary

This mixture is not considered to be ecotoxic.

Supporting Data

Aquatic	None of the ingredients are considered ecotoxic in the aquatic environment.
Bioaccumulation	Not readily biodegradable
Degradability	No data
Soil	EPA has not classified the mixture as ecotoxic in the soil environment. The soil toxicity value for the mixture is ≥ 100 mg/kg.
Terrestrial vertebrate	EPA has not classified the mixture as ecotoxic to terrestrial vertebrates. Using LD_{50}'s for ingredients, the calculated LD_{50} (oral, rat) for the mixture is >5,000 mg/kg. Data considered includes: Acetone 3000 mg/kg (mouse), propan-2-ol 3600 mg/kg (mouse).
Terrestrial invertebrate	EPA has not classified the mixture as ecotoxic to terrestrial invertebrates.
Biocidal	This product is not intended to have a biocidal action.
Environmental effect levels	No EELs are available for this mixture or ingredients.

13. Disposal Considerations

Restrictions	There are no product-specific restrictions, however, local council and resource consent conditions may apply, including requirements of trade waste consents.
Disposal method	Disposal of this product must comply with the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. The substance must be treated and therefore rendered non-hazardous before discharge to the environment.
Contaminated packaging	Pressurised container: Do not puncture or incinerate containers. Send to landfill or similar. Dispose of large quantities as hazardous waste.

14. Transport Information

Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2007

Considered a hazardous substance for transport.

UN number:	1950	**Proper shipping name:**	AEROSOL
Class(es)	2.1	**Packing group:**	NA
Precautions:	Flammable Aerosol	**Hazchem code:**	1T (recommended)

IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN number:	1950	**Proper shipping name:**	AEROSOL
Class(es)	2.1	**Packing group:**	NA
Precautions:	Flammable Aerosol	**EmS**	F-D, S-U

IATA

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN number:	1950	**Proper shipping name:**	AEROSOL
Class(es)	2.1	**Packing group:**	NA
Precautions:	Flammable Aerosol	**ERG Code**	2L

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR002515, Aerosols (Flammable) Group Standard 2006.

Specific Workplace Controls (as per HSNO approval referenced to Controls Matrix)

Key workplace requirements are:

SDS	To be available within 10 minutes in workplaces storing any quantity in a place of work.
Labelling	No removal of labels and/or decanting of product into other containers can occur.
Emergency plan	Required if > 3000L is stored.
Approved handler	Required if > *3000L* is handled or stored
Tracking	This substance is not required to be tracked.
Bunding & secondary containment	Required if > *3000L* is stored.
Signage	Required if > *3000L* is stored in any one location.
Location test certificate	Required if > *3000L* is stored in any one location.
Flammable zone	Must be established if > *3000L* is stored in any one location.
Fire extinguisher	If > 3000L present.

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.

Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health, Safety in Employment Act and Regulations, local Council Rules and Regional Council Plans.

16. Other Information

Abbreviations

Approval Code	Approval HSR002515, Aerosols (Flammable) Group Standard 2006 Controls, EPA. www.epa.govt.nz
CAS Number	Unique Chemical Abstracts Service Registry Number
Ceiling	Ceiling Exposure Value: The maximum airborne concentration of a biological or chemical agent to which a worker may be exposed at any time.
Controls Matrix	List of default controls linking regulation numbers to Matrix code (e.g. T1, I16).
EC_{50}	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
ERMA	Environmental Risk Management Authority (now EPA)
EPA	Environmental Protection Agency (previously known as ERMA)
HAZCHEM Code	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
HSNO	Hazardous Substances and New Organisms (Act and Regulations)
IARC	International Agency for Research on Cancer
LEL	Lower Explosive Limit
LD_{50}	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
LC_{50}	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats)
MSDS (SDS)	Material Safety Data Sheet (or Safety Data Sheet)
STEL	Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded
TWA	Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)
UEL	Upper Explosive Limit
UN Number	United Nations Number
WES	Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed.

References

Data	Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID) http://www.epa.govt.nz/hs/compliance/chemicals.html , for specific chemicals.
EPA Transfer Gazettes	Classifications and controls assigned for specific ingredients (consolidated gazette, 2004)
Controls Matrix	Part of the EPA New Zealand User Guide to the HSNO Control Regulations
WES 2013	The NZ Workplace Exposure Standards Effective from 2013, published by WorkSafe NZ and available on their web site – www.worksafe.govt.nz.
Other References:	Suppliers SDS

Review

Date	Reason for review
December 2011	DRAFT SDS generated (to be reviewed)
January 2012	Reviewed (Hilti). Alternative names, address updated. SDS finalised.
November 2014	Update, review of classes for ingredients. Review of toxicological data, formatting. DoL to WorkSafe, including IATA and IMDG information.

Disclaimer

This SDS was prepared by Datachem LTD and is based on our current state of knowledge, including information obtained from suppliers. The SDS is given in good faith and constitutes a guideline (not a guarantee of safety). The level of risk each substance poses is relevant to its properties (as summarised in the SDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. The likely HSNO classifications, are based on our experience, EPA Guidelines and international classifications. This SDS is copyright Datachem and must not be copied, edited or used for other than intended purpose. To contact the SDS author, email info@datachem.co.nz or phone: ***(09) 940 30 80.***

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