Chem-Set™ CMT3387

Initial Date: **02/07/2024**
Revision Date: **10/05/2026**
Print Date: **10/05/2026**
S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	Chem-Set CMT3387
Synonyms	Not Available
Proper shipping name	Chemical under pressure, flammable, n.o.s. (contains nitrogen and 1,3,3,3-tetrafluoropropene)
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Canister Contact Adhesive

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**Chemical Concepts Inc.**
Address	410 Pike Road Huntingdon Valley, PA 19006
Telephone	1.800.220.1966
Fax	Not Available
Website	chemical-concepts.com
Email	sales@chemical-concepts.com

Chemical™ Concepts
Our expertise is your solution.
chemical-concepts.com
800.220.1966
410 Pike Road • Huntingdon Valley, PA 19006

Emergency phone number

Association / Organisation	**INFOTRAC**
Emergency telephone number(s)	**1.800.535.5053**
Company telephone number	**1-800-220-1966**

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health, Red = Fire, Yellow = Reactivity and White = Special (Oxidizer or water reactive substances)

Classification	Chemical Under Pressure Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure Category 3, Specific Target Organ Toxicity - Repeated Exposure Category 2

Label elements

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

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H283	Flammable chemical under pressure: May explode if heated
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335+H336	May cause respiratory irritation or drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

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.
P260	Do not breathe gas.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264	Wash all exposed external body areas thoroughly after handling.
P272	Contaminated work clothing must not be allowed out of the workplace.

Precautionary statement(s) Response

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P370+P378	In case of fire: Use alcohol resistant foam or fine spray/water fog to extinguish.
P376	Stop leak if safe to do so.
P381	In case of leakage, eliminate all ignition sources.
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.
P314	Get medical advice/attention if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410+P403	Protect from sunlight. Store in a well-ventilated place.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

No further product hazard information.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
79-20-9	15-40	methyl acetate
98-56-6	3-7	4-chlorobenzotrifluoride
1675-54-3	0.1-1	bisphenol A diglycidyl ether
29118-24-9	1-5	1,3,3,3-tetrafluoropropene
124-38-9	3-7	carbon dioxide
7727-37-9.	0.5-1.5	nitrogen

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	‣ If product comes in contact with eyes remove the patient from gas source or contaminated area. ‣ Take the patient to the nearest eye wash, shower or other source of clean water. ‣ Open the eyelid(s) wide to allow the material to evaporate. ‣ Gently rinse the affected eye(s) with clean, cool water for at least 15 minutes. Have the patient lie or sit down and tilt the head back. Hold the eyelid(s) open and pour water slowly over the eyeball(s) at the inner corners, letting the water run out of the outer corners. ‣ The patient may be in great pain and wish to keep the eyes closed. It is important that the material is rinsed from the eyes to prevent further damage. ‣ Ensure that the patient looks up, and side to side as the eye is rinsed in order to better reach all parts of the eye(s)

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	‣ Transport to hospital or doctor. ‣ Even when no pain persists and vision is good, a doctor should examine the eye as delayed damage may occur. ‣ If the patient cannot tolerate light, protect the eyes with a clean, loosely tied bandage. ‣ Ensure verbal communication and physical contact with the patient. **DO NOT** allow the patient to rub the eyes **DO NOT** allow the patient to tightly shut the eyes **DO NOT** introduce oil or ointment into the eye(s) without medical advice **DO NOT** use hot or tepid water.
Skin Contact	If skin contact occurs: ‣ Immediately remove all contaminated clothing, including footwear. ‣ Flush skin and hair with running water (and soap if available). ‣ Seek medical attention in event of irritation.
Inhalation	‣ Following exposure to gas, remove the patient from the gas source or contaminated area. ‣ NOTE: Personal Protective Equipment (PPE), including positive pressure self-contained breathing apparatus may be required to assure the safety of the rescuer. ‣ Prostheses such as false teeth, which may block the airway, should be removed, where possible, prior to initiating first aid procedures. ‣ If the patient is not breathing spontaneously, administer rescue breathing. ‣ If the patient does not have a pulse, administer CPR. ‣ If medical oxygen and appropriately trained personnel are available, administer 100% oxygen. ‣ Summon an emergency ambulance. If an ambulance is not available, contact a physician, hospital, or Poison Control Centre for further instruction. ‣ Keep the patient warm, comfortable and at rest while awaiting medical care. ‣ **MONITOR THE BREATHING AND PULSE, CONTINUOUSLY.** ‣ Administer rescue breathing (preferably with a demand-valve resuscitator, bag-valve mask-device, or pocket mask as trained) or CPR if necessary.
Ingestion	Not considered a normal route of entry.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

For gas exposures:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema .
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.
EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 Fire-fighting measures

Extinguishing media

DO NOT EXTINGUISH BURNING GAS UNLESS LEAK CAN BE STOPPED SAFELY:
OTHERWISE: LEAVE GAS TO BURN.
FOR SMALL FIRE:

- Dry chemical, CO_2 or water spray to extinguish gas (only if absolutely necessary and safe to do so).
- **DO NOT** use water jets.

Special hazards arising from the substance or mixture

Fire Incompatibility	‣ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	FOR FIRES INVOLVING MANY GAS CYLINDERS: ‣ To stop the flow of gas, specifically trained personnel may inert the atmosphere to reduce oxygen levels thus allowing the capping of leaking container(s). ‣ Reduce the rate of flow and inject an inert gas, if possible, before completely stopping the flow to prevent flashback. ‣ **DO NOT extinguish the fire until the supply is shut off** otherwise an explosive re-ignition may occur. --- GENERAL --- ‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ May be violently or explosively reactive. ‣ Wear breathing apparatus plus protective gloves.
Fire/Explosion Hazard	‣ HIGHLY FLAMMABLE: will be easily ignited by heat, sparks or flames. ‣ Will form explosive mixtures with air ‣ Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration. ‣ Vapours may travel to source of ignition and flash back. Combustion products include:

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	‣ carbon monoxide (CO) ‣ carbon dioxide (CO2) ‣ other pyrolysis products typical of burning organic material.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	‣ Avoid breathing vapour and any contact with liquid or gas. Protective equipment including respirator should be used. ‣ **DO NOT** enter confined spaces where gas may have accumulated.
Major Spills	‣ Clear area of all unprotected personnel and move upwind. ‣ Alert Emergency Authority and advise them of the location and nature of hazard. ‣ May be violently or explosively reactive. ‣ Remove leaking cylinders to a safe place. ‣ Fit vent pipes. Release pressure under safe, controlled conditions ‣ Burn issuing gas at vent pipes. ‣ DO NOT exert excessive pressure on valve; DO NOTattempt to operate damaged valve.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	· Consider use in closed pressurised systems, fitted with temperature, pressure and safety relief valves which are vented for safe dispersal. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature · The tubing network design connecting gas cylinders to the delivery system should include appropriate pressure indicators and vacuum or suction lines. · Fully-welded types of pressure gauges, where the bourdon tube sensing element is welded to the gauge body, are recommended. ‣ Avoid generation of static electricity. Earth all lines and equipment. ‣ **DO NOT** transfer gas from one cylinder to another.
Other information	‣ Cylinders should be stored in a purpose-built compound with good ventilation, preferably in the open. ‣ Such compounds should be sited and built in accordance with statutory requirements. ‣ The storage compound should be kept clear and access restricted to authorised personnel only.

Conditions for safe storage, including any incompatibilities

Suitable container	‣ Cylinder: ‣ Ensure the use of equipment rated for cylinder pressure. ‣ Ensure the use of compatible materials of construction. ‣ Valve protection cap to be in place until cylinder is secured, connected.
Storage incompatibility	Carbon dioxide: ‣ reacts violently with strong bases and alkali metals (especially their dusts) ‣ may ignite or explode when heated or in suspended chemically active metals (and their hydrides) such as aluminium, chromium, manganese, magnesium (above 775 C), titanium (above 550 C), uranium (above 750 C) or zirconium , diethylmagnesium ‣ is incompatible with water, acrolein, acrylaldehyde, amines, anhydrous ammonia, aziridine, metal acetylides (such as lithium acetylide), caesium monoxide (moist), lithium, potassium, sodium, sodium carbide, sodium-potassium alloy, sodium peroxide, titanium ‣ may build up static electricity when discharged at high flow rates from storage cylinders or fire extinguishers - this may produce sparks resulting in ignition of flammables or explosives. ‣ may decompose to toxic carbon monoxide and flammable oxygen when exposed to electrical discharges or very high temperatures ‣ Avoid reaction with oxidising agents ‣ Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	methyl acetate	Methyl acetate	200 ppm / 610 mg/m3	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	methyl acetate	Methyl acetate	200 ppm / 610 mg/m3	760 mg/m3 / 250 ppm	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	bisphenol A diglycidyl ether	Particulates Not Otherwise Regulated (PNOR)- Respirable fraction	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	bisphenol A diglycidyl ether	Particulates Not Otherwise Regulated (PNOR)- Total dust	15 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table	bisphenol A diglycidyl ether	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available

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Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Z-3						
US OSHA Permissible Exposure Limits (PELs) Table Z-3	bisphenol A diglycidyl ether	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	bisphenol A diglycidyl ether	Particulates not otherwise regulated	Not Available	Not Available	Not Available	See Appendix D - Substances with No Established RELs
US OSHA Permissible Exposure Limits (PELs) Table Z-1	carbon dioxide	Carbon dioxide	5000 ppm / 9000 mg/m3	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	carbon dioxide	Carbon dioxide	5000 ppm / 9000 mg/m3	54000 mg/m3 / 30000 ppm	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
methyl acetate	250 ppm	1,700 ppm	10000* ppm
bisphenol A diglycidyl ether	39 mg/m3	430 mg/m3	2,600 mg/m3
bisphenol A diglycidyl ether	90 mg/m3	990 mg/m3	5,900 mg/m3
1,3,3,3-tetrafluoropropene	1,400 ppm	Not Available	Not Available
nitrogen	7.96E+05 ppm	8.32E+05 ppm	8.69E+05 ppm

Ingredient	Original IDLH	Revised IDLH
methyl acetate	Not Available	Not Available
4-chlorobenzotrifluoride	Not Available	Not Available
bisphenol A diglycidyl ether	Not Available	Not Available
1,3,3,3-tetrafluoropropene	250 mg/m3	Not Available
carbon dioxide	40,000 ppm	Not Available
nitrogen	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
Individual protection measures, such as personal protective equipment	
Eye and face protection	‣ Safety glasses with side shields. ‣ Chemical goggles.[AS/NZS 1337.1, EN166 or national equivalent] ‣ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	**NOTE:** ‣ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ‣ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. ‣ When handling sealed and suitably insulated cylinders wear cloth or leather gloves.
Body protection	See Other protection below
Other protection	‣ The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials including cotton. ‣ Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost. ‣ Protective overalls, closely fitted at neck and wrist. ‣ Eye-wash unit. **IN CONFINED SPACES:** ‣ Non-sparking protective boots ‣ Static-free clothing. ‣ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ‣ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ‣ Non sparking safety or conductive footwear should be considered.

Respiratory protection

Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

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- Positive pressure, full face, air-supplied breathing apparatus should be used for work in enclosed spaces if a leak is suspected or the primary containment is to be opened (e.g. for a cylinder change)
- Air-supplied breathing apparatus is required where release of gas from primary containment is either suspected or demonstrated.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Not Available

Physical state	Compressed Gas	**Relative density (Water = 1)**	0.98
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (mm2/s)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	>-13	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Not Available	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	<5
Heat of Combustion (kJ/g)	Not Available	**Ignition Distance (cm)**	Not Available
Flame Height (cm)	Not Available	**Flame Duration (s)**	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	**Enclosed Space Ignition Deflagration Density (g/m3)**	Not Available
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available
Particle Size	Not Available		

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

a) Acute Toxicity	Based on available data, the classification criteria are not met.
b) Skin Irritation/Corrosion	Based on available data, the classification criteria are not met.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating
d) Respiratory or Skin sensitisation	There is sufficient evidence to classify this material as sensitising to skin or the respiratory system
e) Mutagenicity	Based on available data, the classification criteria are not met.
f) Carcinogenicity	Based on available data, the classification criteria are not met.
g) Reproductivity	Based on available data, the classification criteria are not met.
h) STOT - Single Exposure	There is sufficient evidence to classify this material as toxic to specific organs through single exposure
i) STOT - Repeated Exposure	There is sufficient evidence to classify this material as toxic to specific organs through repeated exposure
j) Aspiration Hazard	Based on available data, the classification criteria are not met.

Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.

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	Carbon dioxide is an odourless gas, which gives very poor warning of exposure. It can cause rapid loss of consciousness, and death from lack of oxygen at concentrations of 10% in air. Carbon dioxide is the most powerful dilator of brain vessels known. Inhalation of non-toxic gases may cause: ▸ CNS effects: headache, confusion, dizziness, stupor, seizures and coma; ▸ respiratory: shortness of breath and rapid breathing; ▸ cardiovascular: collapse and irregular heart beats; ▸ gastrointestinal: mucous membrane irritation, nausea and vomiting.
Ingestion	Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments
Skin Contact	The material is not classified as a skin irritant under Regulation (EC) No 1272/2008 (CLP), as amended. Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.
Eye	This material causes serious eye irritation. Not considered to be a risk because of the extreme volatility of the gas.
Chronic	Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Main route of exposure to the gas in the workplace is by inhalation. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Chem-Set CMT3387

TOXICITY	IRRITATION
Not Available	Not Available

methyl acetate

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[2]	Eye (Rodent - rabbit): 100mg/24H - Moderate
Oral (Rabbit) LD50; 3700 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
	Skin (Rodent - rabbit): 20mg/24H - Moderate
	Skin (Rodent - rabbit): 500mg/24H - Mild
	Skin: no adverse effect observed (not irritating)[1]

4-chlorobenzotrifluoride

TOXICITY	IRRITATION
Dermal (rabbit) LD50: >2 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
Inhalation (Rat) LC50: >32.03 mg/l4h[1]	Skin: no adverse effect observed (not irritating)[1]
Oral (Mouse) LD50; 11500 mg/kg[2]	

bisphenol A diglycidyl ether

TOXICITY	IRRITATION
dermal (rat) LD50: >2000 mg/kg[1]	Eye (Rodent - rabbit): 100mg - Mild
Oral (Rat) LD50: >2000 mg/kg[1]	Eye (Rodent - rabbit): 100mg - Mild
	Eye (Rodent - rabbit): 100mg - Mild
	Eye (Rodent - rabbit): 20mg/24H - Moderate
	Eye (Rodent - rabbit): 2mg/24H - Severe
	Eye (Rodent - rabbit): 5mg/24H - Severe
	Eye: adverse effect observed (irritating)[1]
	Skin (Rodent - guinea pig): 2750mg/55D
	Skin (Rodent - rabbit): 2mg/24H - Severe
	Skin (Rodent - rabbit): 500mg - Mild
	Skin (Rodent - rabbit): 500uL/24H - Moderate
	Skin: adverse effect observed (irritating)[1]

1,3,3,3-tetrafluoropropene

TOXICITY	IRRITATION
Inhalation (Rat) LC50: >1157.752 ppm4h[2]	Skin: no adverse effect observed (not irritating)[1]

carbon dioxide

TOXICITY	IRRITATION
Not Available	Not Available

nitrogen

TOXICITY	IRRITATION
Not Available	Not Available

Legend:	***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances***

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METHYL ACETATE	For methyl acetate: Acute toxicity: Methyl acetate is a water-soluble substance with high volatility. In animal testing, the substance has narcotic properties at high concentration; this is soon reversible after exposure ends. Methyl acetate is absorbed via the lungs. After absorption, it is broken down to methanol and acetic acid. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
4-CHLOROBENZOTRIFLUORIDE	Medium to long term exposure to chlorobenzotrifluoride may produce increase in weight of the liver, kidney, and thyroid gland at high doses. Only limited reproductive effects were noted, and no gene alteration effects. There was also no evidence of definite cancer-causing effects.
BISPHENOL A DIGLYCIDYL ETHER	Animal testing over 13 weeks showed bisphenol A diglycidyl ether (BADGE) caused mild to moderate, chronic, inflammation of the skin. Reproductive and Developmental Toxicity: Animal testing showed BADGE given over several months caused reduction in body weight but had no reproductive effects. Cancer-causing potential: It has been concluded that bisphenol A diglycidyl ether cannot be classified with respect to its cancer-causing potential in humans. Genetic toxicity: Laboratory tests on genetic toxicity of BADGE have so far been negative. Immunotoxicity: Animal testing suggests regular injections of diluted BADGE may result in sensitization. Consumer exposure: Comsumer exposure to BADGE is almost exclusively from migration of BADGE from can coatings into food. Bisphenol A may have effects similar to female sex hormones and when administered to pregnant women, may damage the foetus. It may also damage male reproductive organs and sperm. Glycidyl ethers can cause genetic damage and cancer. Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) share many common characteristics with respect to animal toxicology. One such oxirane is ethyloxirane; data presented here may be taken as representative. For 1,2-butylene oxide (ethyloxirane): In animal testing, ethyloxirane increased the incidence of tumours of the airways in animals exposed via inhalation. However, tumours were not observed in mice chronically exposed via skin. Two structurally related substances, oxirane (ethylene oxide) and methyloxirane (propylene oxide), which are also direct-acting alkylating agents, have been classified as causing cancer. 55badger The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
1,3,3,3-TETRAFLUOROPROPENE	Inhalation (rat) NOEL (28 days): >1.5 mg/l * * Vendor HFO-1234ze is not likely to accumulate in the bodies of humans or animals HFO-1234ze is practically non-toxic. Short-term exposures at levels higher than 10% have not induced cardiac sensitization to adrenalin nor induced serious toxic effects. Rats and rabbits did not exhibit any serious toxic, developmental or reproductive effects even with exposures to high levels of HFO-1234ze. Based on a series of mutagenicity and genomics studies, the cancer risk for HFO-1234ze is low, no cardiac sensitisation was observed in dogs with exposures up to 120,000 ppm; repeated dose toxicity in rats (13-wk) found mild effects on the heart (NOEL 5,000ppm); in vitro genotoxicity findings include negative Ames Test and negative human lymphocyte chromosome aberration test; in vivo genotoxicity findings in the mouse micronucleus test were negative (inhalation, mammalian bone-marrow cytogenic test with chromosomal analysis). Inhalation of perfluoroalkenes can cause lung injury, kidney damage, brain changes and death. Repeated exposures may alter blood pressure and the production of blood cells. The potential for causing cancer is the subject of speculation. Disinfection byproducts (DBPs) are formed when disinfectants such as chlorine, chloramines and ozone react with organic and inorganic matter in water. Animal studies have shown that some DBPs cause cancer. To date, several hundred DBPs have been identified. Numerous haloalkanes and haloalkenes have been tested for cancer-causing and mutation-causing activities.
NITROGEN	No significant acute toxicological data identified in literature search.
Chem-Set CMT3387 & 4-CHLOROBENZOTRIFLUORIDE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.
Chem-Set CMT3387 & BISPHENOL A DIGLYCIDYL ETHER	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✗	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✓
Respiratory or Skin sensitisation	✓	**STOT - Repeated Exposure**	✓
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ ***– Data either not available or does not fill the criteria for classification***
✓ ***– Data available to make classification***

SECTION 12 Ecological information

Toxicity

Chem-Set CMT3387

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

methyl acetate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>120mg/l	1
EC50	48h	Crustacea	1026.7mg/l	1
LC50	96h	Fish	250mg/l	1
NOEC(ECx)	72h	Algae or other aquatic plants	>=120mg/l	1

Continued...

4-chlorobenzotrifluoride	

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>0.41mg/l	2
EC50	48h	Crustacea	3.68mg/l	1
NOEC(ECx)	504h	Crustacea	0.03mg/l	1
LC50	96h	Fish	3mg/l	2

bisphenol A diglycidyl ether

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	9.4mg/l	2
EC50	48h	Crustacea	1.1mg/l	2
NOEC(ECx)	504h	Crustacea	0.3mg/l	2
LC50	96h	Fish	1.2mg/l	2

1,3,3,3-tetrafluoropropene

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>170mg/l	2
EC50	48h	Crustacea	>160mg/l	2
EC50(ECx)	48h	Crustacea	>160mg/l	2
ErC50	72h	Algae or other aquatic plants	>170mg/l	2
LC50	96h	Fish	>117mg/l	2
EC50	72h	Algae or other aquatic plants	>10mg/l	2
EC50(ECx)	72h	Algae or other aquatic plants	>10mg/l	2

carbon dioxide

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96h	Fish	35mg/l	1

nitrogen

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

Legend: ***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data 8. User defined data***

For carbon dioxide:
Environmental Fate: Carbon dioxide in earth's atmosphere is considered a trace gas. There are seasonal fluctuations of atmospheric concentrations of carbon dioxide primarily due to CO2 absorbed during seasonal plant growth. Due to human activities such as the combustion of fossil fuels and deforestation, the concentration of atmospheric carbon dioxide has increased by about 35% since preindustrial times.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
methyl acetate	LOW	LOW
4-chlorobenzotrifluoride	HIGH	HIGH
bisphenol A diglycidyl ether	HIGH	HIGH
carbon dioxide	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
methyl acetate	LOW (LogKOW = 0.18)
4-chlorobenzotrifluoride	LOW (BCF = 202)
bisphenol A diglycidyl ether	MEDIUM (LogKOW = 3.84)
carbon dioxide	LOW (LogKOW = 0.83)
nitrogen	LOW (LogKOW = 0.67)

Mobility in soil

Ingredient	Mobility
methyl acetate	MEDIUM (Log KOC = 3.324)
4-chlorobenzotrifluoride	LOW (Log KOC = 1912)
bisphenol A diglycidyl ether	LOW (Log KOC = 1767)
carbon dioxide	HIGH (Log KOC = 1.498)

Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

Continued...

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Evaporate or incinerate residue at an approved site. ▸ Return empty containers to supplier. ▸ Ensure damaged or non-returnable cylinders are gas-free before disposal.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO

Shipping container, transport vehicle placarding, and labeling may vary from the below information. This depends on the quantity shipped, the applicability of excepted quantity requirements, limited quantity requirements, and/or special provisions according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

Land transport (DOT)

14.1. **UN number or ID number**	3501
14.2. **UN proper shipping name**	Chemical under pressure, flammable, n.o.s. (contains nitrogen and 1,3,3,3-tetrafluoropropene)
14.3. **Transport hazard class(es)**	Class: 2.1 Subsidiary Hazard: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Hazard Label: 2.1 Special provisions: 362, T50, TP40 Limited quantity: 0

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	3501
14.2. **UN proper shipping name**	Chemical under pressure, flammable, n.o.s. * (contains nitrogen and 1,3,3,3-tetrafluoropropene)
14.3. **Transport hazard class(es)**	ICAO/IATA Class: 2.1 ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: 10L
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: A1 A187 Cargo Only Packing Instructions: 218 Cargo Only Maximum Qty / Pack: 75 kg Passenger and Cargo Packing Instructions: Forbidden Passenger and Cargo Maximum Qty / Pack: Forbidden Passenger and Cargo Limited Quantity Packing Instructions: Forbidden Passenger and Cargo Limited Maximum Qty / Pack: Forbidden

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	3501
14.2. **UN proper shipping name**	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (contains nitrogen and 1,3,3,3-tetrafluoropropene)
14.3. **Transport hazard class(es)**	IMDG Class: 2.1 IMDG Subsidiary Hazard: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	EMS Number: F-D, S-U Special provisions: 274 362

Continued...

	Limited Quantities	0

14.7. Maritime transport in bulk according to IMO instruments

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
methyl acetate	Not Applicable
4-chlorobenzotrifluoride	Not Applicable
bisphenol A diglycidyl ether	Not Applicable
1,3,3,3-tetrafluoropropene	Not Applicable
carbon dioxide	Not Applicable
nitrogen	Not Applicable

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
methyl acetate	Not Applicable
4-chlorobenzotrifluoride	Not Applicable
bisphenol A diglycidyl ether	Not Applicable
1,3,3,3-tetrafluoropropene	Not Applicable
carbon dioxide	Not Applicable
nitrogen	Not Applicable

SECTION 15 Regulatory information

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

methyl acetate is found on the following regulatory lists

US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Section 4/12 (b) - Sunset Dates/Status

4-chlorobenzotrifluoride is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
US - California Proposition 65 - Carcinogens
US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Section 4/12 (b) - Sunset Dates/Status

bisphenol A diglycidyl ether is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US - California - Biomonitoring - Priority Chemicals
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Section 4/12 (b) - Sunset Dates/Status

1,3,3,3-tetrafluoropropene is found on the following regulatory lists

US - Pennsylvania - Hazardous Substance List
US AIHA Workplace Environmental Exposure Levels (WEELs)
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)

carbon dioxide is found on the following regulatory lists

FEI Equine Prohibited Substances List - Controlled Medication

Continued...

FEI Equine Prohibited Substances List (EPSL)
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US EPA Pesticide Chemical Search - Antimicrobial
US EPA Pesticide Chemical Search - Biopesticides
US EPA Pesticide Chemical Search - Conventional Chemical
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

nitrogen is found on the following regulatory lists

US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA Pesticide Chemical Search - Biopesticides
US EPA Pesticide Chemical Search - Conventional Chemical
US New York City Community Right-to-Know: List of Hazardous Substances
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	Yes
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	Yes
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

Continued...

WARNING: This product can expose you to chemicals including **4-chlorobenzotrifluoride**, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

Additional State Regulatory Information

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (methyl acetate; 4-chlorobenzotrifluoride; bisphenol A diglycidyl ether; carbon dioxide; nitrogen)
China - IECSC	Yes
Colombia - Colombia National Industrial Chemicals Inventory	No (methyl acetate; 4-chlorobenzotrifluoride; bisphenol A diglycidyl ether; 1,3,3,3-tetrafluoropropene; carbon dioxide; nitrogen)
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (nitrogen)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	No (1,3,3,3-tetrafluoropropene)
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	No (4-chlorobenzotrifluoride; bisphenol A diglycidyl ether; 1,3,3,3-tetrafluoropropene)
Vietnam - NCI	Yes
Russia - FBEPH	No (1,3,3,3-tetrafluoropropene)
UAE - Control List (Banned/Restricted Substances)	No (methyl acetate; 4-chlorobenzotrifluoride; bisphenol A diglycidyl ether; 1,3,3,3-tetrafluoropropene; carbon dioxide; nitrogen)
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

SECTION 16 Other information

Revision Date	10/05/2026
Initial Date	02/07/2024

CONTACT POINT

PLEASE NOTE THAT TITANIUM DIOXIDE IS NOT PRESENT IN CLEAR OR NEUTRAL BASES

SDS Version Summary

Version	Date of Update	Sections Updated
3.10	10/05/2026	Toxicological information - Acute Health (skin), First Aid measures - Advice to Doctor, Hazards identification - Classification, First Aid measures - First Aid (skin), Composition / information on ingredients - Ingredients, Exposure controls / personal protection - Personal Protection (eye), Exposure controls / personal protection - Personal Protection (hands/feet)

Other information

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

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