



SAFETY DATA SHEET

in accordance with 29 CFR 1910.1200, WHMIS 2015 and Safe Work Australia

Revision date: 25 February 2022 **Date of previous issue:** 29 December 2020 **SDS No.** 314A-12

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

279 PCS (Aerosol)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Cleaning product for removal of grease, flux and other soils from electrical equipment or electronics.

1.3. Details of the supplier of the safety data sheet

Company:

A.W. CHESTERTON COMPANY
860 Salem Street
Groveland, MA 01834-1507, USA
Tel. +1 978-469-6446 Fax: +1 978-469-6785
(Mon. - Fri. 8:30 - 5:00 PM EST)
SDS requests: www.chesterton.com
E-mail (SDS questions): ProductSDSs@chesterton.com
E-mail: customer.service@chesterton.com

Supplier:

Canada: A.W. Chesterton Company Ltd., 889 Fraser Drive,
Unit 105, Burlington, Ontario L7L 4X8 – Tel. 905-335-5055

1.4. Emergency telephone number

24 hours per day, 7 days per week
Call Infotrac: 1-800-535-5053
Outside N. America: +1 352-323-3500 (collect)
NSW Poisons Information Centre (Australia): 13 11 26

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to 29 CFR 1910.1200 / WHMIS 2015

Liquefied gas, H280

2.1.2. Classification according to Safe Work Australia / GHS 7

Aerosol, Category 3, H229

2.1.3. Additional information

For full text of H-statements: see SECTIONS 2.2 and 16.

2.2. Label elements

Labeling according to 29 CFR 1910.1200 / WHMIS 2015

Hazard pictograms:



Signal word: Warning

Hazard statements: H280 Contains gas under pressure; may explode if heated.

Precautionary statements: P410/403 Protect from sunlight. Store in a well-ventilated place.

Supplemental information: None

Labeling according to Safe Work Australia / GHS 7

Hazard pictograms: None

Signal word: Warning

Hazard statements: H229 Pressurized container: May burst if heated.

Precautionary statements: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P251 Do not pierce or burn, even after use.
 P410/412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Supplemental information: None

2.3. Other hazards

Direct skin contact may cause skin irritation, frostbite and drying of the skin.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Hazardous Ingredients ¹	% Wt.	CAS No.	GHS Classification
1,1,1,2-Tetrafluoroethane	25-35	811-97-2	Press. Gas (Liq.), H280
Other ingredients:			
Methyl Nonafluoro Ethers	65-75	163702-07-6 163702-08-7	Not classified

For full text of H-statements: see SECTION 16.

¹ Classified according to: 29 CFR 1910.1200, 1915, 1916, 1917, Mass. Right-to-Know Law (ch. 40, M.G.L..O. 111F), WHMIS 2015, Safe Work Australia, GHS

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation: Remove to fresh air. Do not administer adrenaline (epinephrine). Contact physician.

Skin contact: If there is evidence of frostbite, bathe with lukewarm water. Wash skin with soap and water. Contact physician if irritation persists.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion: Do not induce vomiting. Contact physician immediately.

Protection of first-aiders: No special precautions.

4.2. Most important symptoms and effects, both acute and delayed

High vapor concentrations and direct contact are irritating to the eyes. Direct skin contact may cause skin irritation, frostbite and drying of the skin. Vapor in high concentrations may irritate the respiratory tract and cause drowsiness, unconsciousness, headache, dizziness and other central nervous system effects. Cardiac arrhythmia has been reported in animal studies.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms. Do not administer adrenaline (epinephrine).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Nonflammable. Use extinguisher appropriate to the surrounding fire.

Unsuitable extinguishing media: Not applicable

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products: Hydrogen Fluoride, Carbonyl Halides, Halogen acids, oxides of Carbon.

Other hazards: Pressurized containers, when heated, are a potential explosive hazard.

5.3. Advice for firefighters

Cool exposed containers with water. Recommend Firefighters wear self-contained breathing apparatus.

Australian HAZCHEM Emergency Action Code: 1 Y

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Utilize exposure controls and personal protection as specified in Section 8.

6.2. Environmental Precautions

Keep out of sewers, streams and waterways.

6.3. Methods and material for containment and cleaning up

Evacuate area. Provide adequate ventilation. Contain spill to a small area. Pick up with absorbent material (sand, sawdust, clay, etc.) and place in a suitable container for disposal.

6.4. Reference to other sections

Refer to section 13 for disposal advice.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Shake well before using. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No Smoking. Vapors are heavier than air and will collect in low areas. After handling, wash before eating, drinking or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C (120°F). Do not pierce or burn, even after use.

7.3. Specific end use(s)

No special precautions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Occupational exposure limit values**

Ingredients	OSHA PEL ¹		ACGIH TLV ²		AUSTRALIA ES ³	
	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1,1,1,2-Tetrafluoroethane**	N/A	N/A	N/A	N/A	1,000	4,240
Methyl Nonafluoro Ethers*	N/A	N/A	N/A	N/A	N/A	N/A

*American Industrial Hygiene Association (AIHA) recommended limit: 750 ppm.

**American Industrial Hygiene Association (AIHA) recommended limit: 1000 ppm (4240 mg/m³).

¹ United States Occupational Health & Safety Administration permissible exposure limits

² American Conference of Governmental Industrial Hygienists threshold limit values

³ Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants

Biological limit values

No biological exposure limits noted for the ingredient(s).

8.2. Exposure controls**8.2.1. Engineering measures**

Provide sufficient ventilation to keep the vapor concentrations below the exposure limits.

8.2.2. Individual protection measures

Respiratory protection: Not normally needed. In case of insufficient ventilation, utilize an approved organic vapor respirator (e.g., EN filter type A).

Protective gloves: Chemical resistant gloves (e.g., natural rubber, neoprene or PVC)

Eye and face protection: Safety goggles or face shield.

Other: Impervious gloves and clothing (e.g., natural rubber, neoprene or PVC) as necessary for repetitive, prolonged contact with liquid.

8.2.3. Environmental exposure controls

Refer to sections 6 and 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Physical state	liquid	pH	not applicable
Colour	clear, colorless	Kinematic viscosity	not determined
Odour	faint odor	Solubility in water	insoluble
Odour threshold	not determined	Partition coefficient n-octanol/water	not applicable
Boiling point or range	60°C (140°F)	Vapour pressure @ 20°C	170 mm Hg
Melting point/freezing point	-135°C (-211°F)	Density and/or relative density	1.5 kg/l
% Volatile (by volume)	100%	Weight per volume	12.5 lbs/gal.
Flammability	nonflammable	Vapour density (air=1)	> 1
Lower/upper flammability or explosion limits	7.4 (Lower explosion level)	Rate of evaporation (ether=1)	< 1
Flash point	none	% Aromatics by weight	0%
Method	PM Closed Cup	Particle characteristics	not applicable
Autoignition temperature	405°C (761°F)	Explosive properties	not applicable
Decomposition temperature	no data available	Oxidising properties	not applicable

9.2. Other information

None

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

Refer to sections 10.3 and 10.5.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

No dangerous reactions known under conditions of normal use.

10.4. Conditions to avoid

None

10.5. Incompatible materials

Strong bases, reactive metals and strong oxidizers like liquid Chlorine and concentrated Oxygen.

10.6. Hazardous decomposition products

Hydrogen Fluoride, Carbonyl Halides, Halogen acids and other toxic fumes.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects**

Primary route of exposure under normal use: Inhalation, skin and eye contact. Personnel with eye and skin disorders, heart disease and respiratory disorders are generally aggravated by exposure.

Acute toxicity -**Oral:**

Based on available data on components, the classification criteria are not met.

Substance	Test	Result
Methyl Nonfluoro Ethers	LD50, rat	> 5000 mg/kg

Dermal:

No information available

Inhalation:

Based on available data on components, the classification criteria are not met. Vapor in high concentrations may irritate the respiratory tract and cause drowsiness, unconsciousness, headache, dizziness and other central nervous system effects. Cardiac arrhythmia has been reported in animal studies (NOEL: 50000 ppm; LOEL: 75000 ppm)

Substance	Test	Result
Methyl Nonfluoro Ethers	LC50, rat, 4 h	> 1000 mg/l (vapor)
1,1,1,2-Tetrafluoroethane	LC50, rat, 4 h	> 500000 ppm

Skin corrosion/irritation:

Direct skin contact may cause skin irritation, frostbite and drying of the skin.

Substance	Test	Result
Methyl Nonfluoro Ethers	Skin irritation, rabbit	Not irritating
1,1,1,2-Tetrafluoroethane	Skin irritation, rabbit	Not irritating

Serious eye damage/irritation:

High vapor concentrations and direct contact are irritating to the eyes.

Substance	Test	Result
Methyl Nonafluoro Ethers	Eye irritation, rabbit	Not irritating
1,1,1,2-Tetrafluoroethane	Eye irritation, rabbit	Not irritating

Respiratory or skin sensitisation:

Substance	Test	Result
Methyl Nonafluoro Ethers	Skin sensitization, guinea pig	Not sensitizing
1,1,1,2-Tetrafluoroethane	Skin irritation, guinea pig	Not sensitizing

Germ cell mutagenicity:

Based on available data on components, the classification criteria are not met.

Carcinogenicity:

This product contains no carcinogens as listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the Occupational Safety and Health Administration (OSHA) or Regulation (EC) No 1272/2008.

Reproductive toxicity:

Methyl Nonafluoro Ethers: NOAEL, oral, rat, male / female, 28 days = 1000 mg/kg/day; developmental NOAEL, inhalation, rat = 307 mg/l; NOAEL, inhalation, rat, 1 generation = 129 mg/l. 1,1,1,2-Tetrafluoroethane: based on available data, the classification criteria are not met.

STOT – single exposure:

Methyl Nonafluoro Ethers: LOAEL, inhalation, 10 min. = 913 mg/l. 1,1,1,2-Tetrafluoroethane: based on available data, the classification criteria are not met.

STOT – repeated exposure:

Methyl Nonafluoro Ethers: NOAEL, oral, rat, 28 days = 1000 mg/kg/day; NOAEL, inhalation, rat, 11/13 weeks = 129/155 mg/l. 1,1,1,2-Tetrafluoroethane: NOEL, rat = 40000 ppm.

Aspiration hazard:

Based on available data, the classification criteria are not met.

Other information:

None known

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. The information given below is based on a knowledge of the components and the ecotoxicology of similar substances.

12.1. Toxicity

Contains a greenhouse gas which may contribute to global warming. Methyl Nonafluoro Ethers: This product has insignificant toxicity to fathead minnows (96 Hr LC50 = >7.9 mg/l), waterfleas (48 Hr EC50 = >10 mg/l) and algae (96 Hr ErC50 = >8.9 mg/l) at its solubility limit. Ozone-depletion potential: none (0).

12.2. Persistence and degradability

Methyl Nonafluoro Ethers: atmospheric lifetime = approx. 4.1 years.

12.3. Bioaccumulative potential

1,1,1,2-Tetrafluoroethane: log Kow = 1.06, bioconcentration in aquatic organisms is not expected to be significant.

12.4. Mobility in soil

Liquid. Insoluble in water. This substance is highly volatile and will rapidly evaporate to the air if released into the environment. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9).

12.5. Other adverse effects

Contains a greenhouse gas which may contribute to global warming.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

Reclaim or recycle if possible. Incinerate absorbed material in an approved area. Do not incinerate sealed containers. Check local, state and national/federal regulations and comply with the most stringent requirement.

SECTION 14: TRANSPORT INFORMATION**14.1. UN number or ID number**

ADG/ADR/RID/ADN/IMDG/ICAO: UN1950
TDG: UN1950
US DOT: UN1950

14.2. UN proper shipping name

ICAO: Aerosols, Non-Flammable
ADG/IMDG: Aerosols
ADR/RID/ADN: Aerosols, *asphyxiant*
TDG: Aerosols, *non-flammable*
US DOT: Aerosols, *non-flammable*

14.3. Transport hazard class(es)

ADG/ADR/RID/ADN/IMDG/ICAO: 2.2
TDG: 2.2
US DOT: 2.2

14.4. Packing group

ADG/ADR/RID/ADN/IMDG/ICAO: NOT APPLICABLE
TDG: NOT APPLICABLE
US DOT: NOT APPLICABLE

14.5. Environmental hazards

NO ENVIRONMENTAL HAZARDS

14.6. Special precautions for user

NO SPECIAL PRECAUTIONS FOR USER

14.7. Maritime transport in bulk according to IMO instruments

NOT APPLICABLE

14.8. Other information

US DOT: Shipped as Limited Quantity in packaging having a rated capacity gross weight of 66 lb. or less (49 CFR 173.306(a),(3),(i)).
ERG NO. 126

IMDG: EmS. F-D, S-U, Shipped as Limited Quantity

ADR: Classification code 5A, Tunnel restriction code (E), Shipped as Limited Quantity

ADG HAZCHEM CODE: N/A **HIN:** (1)

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.1.1. National regulations****US EPA SARA TITLE III****312 Hazards:**

Gases under pressure

Chemicals subject to reporting requirements of Section 313 of EPCRA and of 40 CFR 372:

None

TSCA: All chemical components are listed in the TSCA inventory.**Other national regulations:** Contains a greenhouse gas which may contribute to global warming. Do not vent to the atmosphere. Recover residual material.**SECTION 16: OTHER INFORMATION**

Abbreviations and acronyms: ADG: Australian Dangerous Goods Code
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 ATE: Acute Toxicity Estimate
 BCF: Bioconcentration Factor
 cATpE: Converted Acute Toxicity point Estimate
 ES: Exposure Standard
 GHS: Globally Harmonized System
 ICAO: International Civil Aviation Organization
 IMDG: International Maritime Dangerous Goods
 LC50: Lethal Concentration to 50 % of a test population
 LD50: Lethal Dose to 50% of a test population
 LOEL: Lowest Observed Effect Level
 N/A: Not Applicable
 NA: Not Available
 NOEC: No Observed Effect Concentration
 NOEL: No Observed Effect Level
 OECD: Organization for Economic Co-operation and Development
 (Q)SAR: Quantitative Structure-Activity Relationship
 REL: Recommended Exposure Limit
 RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
 SCL: Specific Concentration Limit
 SDS: Safety Data Sheet
 STEL: Short Term Exposure Limit
 STOT RE: Specific Target Organ Toxicity, Repeated Exposure
 STOT SE: Specific Target Organ Toxicity, Single Exposure
 TDG: Transportation of Dangerous Goods (Canada)
 TWA: Time Weighted Average
 US DOT: United States Department of Transportation
 WHMIS: Workplace Hazardous Materials Information System
 Other abbreviations and acronyms can be looked up at www.wikipedia.org.

Key literature references and sources for data: Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST)
 Chemical Classification and Information Database (CCID)
 European Chemicals Agency (ECHA) - Information on Chemicals
 Hazardous Chemical Information System (HCIS)
 National Institute of Technology and Evaluation (NITE)
 U.S. National Library of Medicine Toxicology Data Network (TOXNET)

Procedure used to derive the classification for mixtures according to GHS:

Classification	Classification procedure
Liquefied gas, H280 (GHS 3)	Based on component data
Aerosol 3, H229 (GHS > 3)	Based on component data

Relevant H-statements: H229: Pressurized container: May burst if heated.
 H280: Contains gas under pressure; may explode if heated.

Hazard pictogram names: Gas cylinder (GHS 3)

Further information: None

Date of last revision: 25 February 2022

Changes to the SDS in this revision: Sections 2.1.1, 5.3, 15.1, 16.

This information is based solely on data provided by suppliers of the materials used, not on the mixture itself. No warranty is expressed or implied regarding the suitability of the product for the user's particular purpose. The user must make their own determination as to suitability.