VAPCO PRODUCTS, INC.

Safety Data Sheet
Mean Green Adhesive Cylinder

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Mean Green Adhesive Cylinder
Product number	MG-LC; MG-SC; MG-200
Brand	Vapco

1.3 Recommended use of the chemical and restrictions on use

Recommended use: Contact adhesive

Restrictions on use: After December 8, 2026 this chemical substance (as defined in TSCA section 3(2))/product cannot be distributed in commerce to retailers for any use. After March 8, 2027, this chemical substance (as defined in TSCA section 3(2))/product is and cant only be distributed in commerce or processed with a concentration of PCE equal to or greater than 0.1% by weight for the following purposes: (1) Processing as a reactant/intermediate; (2) Processing into formulation, mixture, or reaction product; (3) Processing by repackaging; (4) Recycling; (5) Industrial and commercial use a solvent in open-top batch vapor degreasing; (6) Industrial and commercial use as a solvent in closed-loop batch vapor degreasing; (7) Industrial and commercial use in maskant for chemical milling; (8) Industrial and commercial use as a processing aid in catalyst regeneration in petrochemical manufacturing; (9) Industrial and commercial use as a processing aid in sectors other than petrochemical manufacturing; (10) Industrial and commercial use as a solvent for cold cleaning of tanker vessels; (11) Industrial and commercial use as energized electrical cleaner; (12) Industrial and commercial use as laboratory chemicals; (13) Industrial and commercial use in solvent-based adhesives and sealants; (14) Industrial and commercial use in dry cleaning in 3rd generation machines until December 20, 2027; (15) Industrial and commercial use in all dry cleaning and related spot cleaning until December 19, 2034; (16) Export; and (17) Disposal.

1.4 Supplier's details

Name	Vapco Products, Inc.
Address	401 Marshall Road Valley Park, Missouri 63088 United States
Telephone	(636) 923-2121
Fax	(636) 923-3002
email	info@VapcoProducts.com

1.5 Emergency phone number

(800) 255-3924

SECTION 2: Hazard identification

General hazard statement
Caution: Non-flammable Adhesive Mixture: Contains a component that is flammable in its pure state according to GHS definitions, however when combined in the overall adhesive mixture the adhesive is not flammable in either its liquid or dry states.

2.1 Classification of the substance or mixture

GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Acute toxicity, inhalation, Cat. 4
- Aspiration hazard, Cat. 1
- Carcinogenicity, Cat. 2
- Gases under pressure, liquefied gas

2.2 GHS label elements, including precautionary statements

Pictograms

Signal word **Danger**

Hazard statement(s)

H280	Contains gas under pressure; may explode if heated
H304	May be fatal if swallowed and enters airways
H332	Harmful if inhaled
H351	Suspected of causing cancer

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor if you feel unwell.
P331	Do NOT induce vomiting.
P405	Store locked up.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P501	Dispose of contents/container to the specifications of local, regional, national, and international regulations.

2.3 Other hazards which do not result in classification

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Statement regarding ingredients of unknown toxicity
This product contains the following percentage of chemicals of unknown toxicity: 30%.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

1. Perchloroethylene

Concentration	30 - 40 % (weight)
EC no.	204-825-9
CAS no.	127-18-4
Index no.	602-028-00-4

2. Trans-1,2-dichloroethylene

Concentration	10 - 20 % (weight)
EC no.	205-860-2
CAS no.	156-60-5
Index no.	602-026-00-3

3. Petroleum gases, liquified, sweetened, if they contain > 0.1% w/w Butadiene

Concentration	4 - 6 % (weight)
EC no.	270-705-8
CAS no.	68476-86-8
Index no.	649-203-00-1

4. Carbon Dioxide

Concentration	3 - 4 % (weight)
CAS no.	124-38-9

5. Proprietary Fluorinated Compound Name

Concentration	1 - 10 % (weight), Proprietary*
CAS no.	*

Trade secret statement (OSHA 1910.1200(i))

*The exact chemical identity and/or percentage of the composition has been withheld as a trade secret.

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
If inhaled	First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system), then remove the exposed person to fresh air. Keep at rest in a position comfortable for breathing. Get medical advice/attention.
In case of skin contact	Immediately drench affected area with water for at least 15 minutes. Remove contaminated clothing immediately. Obtain medical attention if irritation develops or persists.
In case of eye contact	Immediately rinse with water for at least 15 minutes. Remove contact

	lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.
If swallowed	Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2 Most important symptoms/effects, acute and delayed

Symptoms/Injuries: Harmful if inhaled. Causes serious eye irritation. May cause drowsiness and dizziness. Asphyxia by lack of oxygen: risk of death.

Symptoms/Injuries After Inhalation: High concentrations may cause central nervous system depression such as dizziness, vomiting, numbness, drowsiness, headache, and similar narcotic symptoms. Inhalation is likely to cause adverse health effects including, but not limited to: irritation, difficulty breathing, and unconsciousness. In elevated concentrations, may cause asphyxiation, central nervous system effects, and increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death. This product contains chlorinated solvent material, which is associated with cardiac sensitization following very high exposures or with concurrent exposure to high stress levels or heart-stimulating or epinephrine or similar heart-stimulating substances. Careful consideration should be applied preceding administration or epinephrine or similar heart-stimulating substances.

Symptoms/Injuries After Skin Contact: Contact with gas/liquid escaping the container can cause dermatitis and defatting.

Symptoms/Injuries After Eye Contact: Contact causes mild irritation with redness, tearing, and blurred vision.

Chronic Health Hazards: Possible cancer causing agent and overexposure may also include damage to skin, kidneys, liver, dizziness, headache, nausea, mental confusion, visual disturbances, lungs, blood, or central nervous system.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Dry chemical, foam, or carbon dioxide (CO_2).

5.2 Specific hazards arising from the chemical

Explosion Hazard: Container may explode in heat of fire. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors.

Incompatibility: Reacts with some plastics, strong oxidizing agents, acids, caustics, alkalis, and chemically active metals (e.g. aluminum, magnesium, sodium, potassium, and lithium). Increased risk of fire or explosion. Certain mixtures of chlorinated solvents may be flammable or reactive under certain conditions. Keep away from sparks, open flames, and hot surfaces. No smoking. Do not spray on open flame or other ignition source.

5.3 Special protective actions for fire-fighters

Precautionary Fire Measures: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use dry chemical, foam, or carbon dioxide (CO_2). Do not breathe fumes from fire or vapors from decomposition. Do NOT fight fire when fire reaches containers. Evacuate area. Fight fire remotely due to the risk of explosion. Shut off all sources of ignition. Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Wear NIOSH-approved Self-Contained Breathing Apparatus with a full face piece operated in a positive pressure demand mode with full body protective clothing when fighting fires.

Hazardous Combustion Products: Carbon oxide(s) (CO, CO_2), various hydrocarbons.

Further information

Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapors, spray, mist, gas. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedure: Eliminate ignition sources first, then ventilate the area. Evacuate unnecessary personnel, isolate, and ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2 Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

For Containment: Ventilate the area. Contain any spills with dikes or absorbents to prevent further migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Eliminate all ignition sources. Ventilate area. Stop the ignition source of the release, if safe to do so. Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering. Take up liquid spill into absorbent material. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Waste Disposal: Dispose of in accordance with local, regional, national, and international regulations. Containers may be hazardous when empty. Do not flame cut, braze, or weld. Product should be fully characterized prior to disposal (40 CFR 261).

Reference to other sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Additional Hazards When Processed: Do not pressurize, cut, or weld containers. Ruptured cylinders may rocket. Pressurized container: May burst if heated. Do not pierce or burn, even after use.

Precautions for Safe Handling: Do not handle until all safety precautions have been read and understood. Avoid contact with skin, eyes and clothing. Do not breathe gas, mist, spray, vapors. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not spray on open flame or other ignition source.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Other Precautions: Keep out of reach of children. Follow label instructions. Vapors may collect in low lying areas.

7.2 Conditions for safe storage, including any incompatibilities

Technical Measures: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.

Storage Conditions: Store in a dry, cool place. Keep only in the original container in a cool, well-ventilated place away from ignition sources. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store locked up/in a secure area.

Incompatible Materials: Reacts with some plastics, strong oxidizing agents, acids, caustics, alkalis, and chemically active metals (e.g. aluminum, magnesium, sodium, potassium, and lithium). Increased risk of fire or explosion. Certain mixtures of chlorinated solvents may be flammable or reactive under certain conditions. Keep away from sparks, open flames, and hot surfaces. No smoking. Do not spray on open flame or other ignition source.
Storage Temperature: < 50°C/122°F.

Specific end use(s)
Solvent-based contact adhesive

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Perchloroethylene (CAS: 127-18-4)
TWA (Inhalation): 50 ppm; 340 mg/m3; AU (AU/SWA)

STEL (Inhalation): 150 ppm; 1020 mg/m3; AU (AU/SWA)

IOELV-LTEL [Tetrachloroethylene] (Inhalation): 138 mg/m3; EU (EU/OSHA)
Skin designation: Yes. List no. 4 under Council Directive 98/24/EC as amended. List last updated on 8/25/2023.

IOELV-LTEL [Tetrachloroethylene] (Inhalation): 20 ppm; EU (EU/OSHA)
Skin designation: Yes. List no. 4 under Council Directive 98/24/EC as amended. List last updated on 8/25/2023.

IOELV-STEL [Tetrachloroethylene] (Inhalation): 275 mg/m3; EU (EU/OSHA)
Skin designation: Yes. List no. 4 under Council Directive 98/24/EC as amended. List last updated on 8/25/2023.

IOELV-STEL [Tetrachloroethylene] (Inhalation): 40 ppm; EU (EU/OSHA)
Skin designation: Yes. List no. 4 under Council Directive 98/24/EC as amended. List last updated on 8/25/2023.

2. Carbon dioxide (CAS: 124-38-9)
TWA (Inhalation): 5000 ppm; 9000 mg/m3; AU (AU/SWA)

STEL (Inhalation): 30000 ppm; 54000 mg/m3; AU (AU/SWA)

TWA [Carbon dioxide in coal mines] (Inhalation): 12500 ppm; 22500 mg/m3; AU (AU/SWA)

IOELV-LTEL (Inhalation): 9000 mg/m3; EU (EU/OSHA)
List no. 2 under Council Directive 98/24/EC as amended. List last updated on 8/25/2023.

IOELV-LTEL (Inhalation): 5000 ppm; EU (EU/OSHA)
List no. 2 under Council Directive 98/24/EC as amended. List last updated on 8/25/2023.

PEL (Inhalation): 5000 ppm; US (US/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

PEL (Inhalation): 9000 mg/m3; US (US/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

PEL (Inhalation): 5000 ppm, (ST) 30,000 ppm; US (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

REL (Inhalation): 5000 ppm, (ST) 30,000 ppm; US (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

8.2 Appropriate engineering controls

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Use explosion-proof equipment. Proper grounding procedures to avoid static electricity should be followed. Use only outdoors or in well-ventilated area. Ensure all local, regional, national, and international regulations are being observed. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Chemical safety goggles. Insufficient ventilation: wear respiratory protection. Respiratory protection of the dependent type.

Skin protection
Wear protective gloves and clothing.

Body protection
Wear suitable protective clothing. Wear protective gloves. Chemical resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Respiratory protection
Use a NIOSH-approved Self-Containing Breathing Apparatus whenever exposure may exceed established Occupational Exposure Limits.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Aerosol spray
Color	Green
Odor	Solvent
Odor threshold	N/D
Melting point/freezing point	N/D
Boiling point or initial boiling point and boiling range	-44 °F (-42 °C) propellant estimated ((
Flammability	Not considered a flammable or an extremely flammable aerosol
Lower and upper explosion limit/flammability limit	N/D
Flash point	N/D
Auto-ignition temperature	N/D
Decomposition temperature	N/D
pH	N/A
Kinematic viscosity	N/D
Solubility	Insoluble in water
Partition coefficient n-octanol/water (log value)	N/D
Vapor pressure	N/D
Evaporation rate	>3 Fast
Density and/or relative density	1.08 - 1.18
Relative vapor density	3.0 (Air=1)
Particle characteristics	N/A

Supplemental information regarding physical hazard classes
Volatile Organic Content: 18.5%
Solids (%): 29.1%

Further safety characteristics (supplemental)
N/A

SECTION 10: Stability and reactivity

10.1 Reactivity
Certain mixtures of chlorinated solvents may be flammable or reactive under certain conditions. May be reactive to chemically active metals and bases.

10.2 Chemical stability
Contains gas under pressure; may explode if heated. Pressurized container; may burst if heated.

10.3 Possibility of hazardous reactions
None known.

10.4 Conditions to avoid
Chlorine liberating material. Do not mix with acids, ammonia or other cleaning compounds.

10.5 Incompatible materials
Reacts with some plastics, strong oxidizing agents, acids, caustics, alkalis, and chemically active metals (e.g. aluminum, magnesium, sodium, potassium, and lithium).

10.6 Hazardous decomposition products
Carbon oxide(s) (CO, CO2). Various hydrocarbons.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Perchloroethylene
LD50 Dermal - Rabbit - 3,228 mg/kg
LD50 Oral - Rat - 2,629 mg/kg
LC50 Inhalation - Rat - 34,200 mg/m3 - 8 hr

Trans-1,2-dichloroethylene
LD50 Oral - Mouse - 2,122 mg/kg
LC50 Inhalation - Rat - 96 mg/l - 4 hr
EC50 - Daphnia magna (Water flea) - 220 mg/l - 48 hr
EC50 - Selenastrum capricornutum (green algae) - 798 mg/l - 96 hr
EC50 - Skeletonema costatum (marine diatom) - 712 mg/l - 96 hr

Proprietary Fluorinated Compound
LD50 Oral - Rat - 24.8 mg/l (3,010 ppm)
LC50 Inhalation - Rat - >2,000 mg/kg

Petroleum gases, liquified, sweetened, if they contain > 0.1% w/w Butadiene
LC50 Inhalation - Rat - 658 mg/l - 4 hr

Skin corrosion/irritation
Slight irritation to eye and mucous membranes. Irritating to skin. Will remove the natural skin oils resulting in dryness, cracking and dermatitis. Repeated and/or prolonged skin contact may cause reddening, burning and blisters. Permanent damage is unlikely. Can be absorbed through skin but not in sufficient amounts to cause adverse effects.

Serious eye damage/irritation

Causes serious eye irritation. Liquid splashes and high concentrations of vapor may cause irritation with tearing, redness, or a stinging or burning feeling. Effects may become more serious with repeated or prolonged contact.

Respiratory or skin sensitization
Harmful by inhalation. High exposures by inhalation will cause anesthetic effects. This may result in loss of consciousness and could prove fatal if exposure has been severe. In susceptible individuals, cardiac sensitization to circulating epinephrine-like compounds can result in sudden, fatal cardiac arrhythmias. In confined or poorly ventilated areas vapors can readily accumulate and can cause unconsciousness and death. Dizziness may occur at 200 ppm perchloroethylene; progressively higher levels may also cause nasal irritation, nausea, incoordination, drunkenness; and over 1000 ppm, unconsciousness and death. A single brief (minutes) inhalation exposure to levels above 6000 ppm perchloroethylene may be immediately fatal. Based on structural analogy and/or equivocal data in animals, excessive exposure may potentially increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats).

Germ cell mutagenicity
None known.

Carcinogenicity
Perchloroethylene has been shown to increase the incidence of tumors in certain strains of mice and rats. Other long-term inhalation studies in rats failed to show tumorigenic response. While perchloroethylene is not believed to pose a measurable carcinogenic risk to man when handled as recommended, and while human data are limited and inconclusive and have not established an association between exposure and cancer, perchloroethylene should be considered to pose a cancer risk pending the availability of further scientific evidence. An increased incidence of some forms of cancers have been observed in various epidemiology studies of workers in the dry cleaning industry and other workers potentially exposed to chemicals including perchloroethylene. Smoking, alcohol consumption, diet and other factors are known to increase the risk of cancer and may have been confounding factors in these studies. These studies were also limited by the lack of exposure measurements or other valid indicators of potential exposure to perchloroethylene, and potential exposure to other chemicals. The current epidemiological evidence does not support a conclusion that occupational exposure to perchloroethylene is a risk factor for cancer of any specific site. Animal studies have shown increases in liver cancer in mice, and renal cancer and mononuclear cell leukemia in rats. The relevance of these observations to humans is not clear at this time.
The International Agency for Research on Cancer (IARC) has concluded there is sufficient evidence of carcinogenicity to experimental animals and limited evidence of carcinogenicity to humans (Group 2A a substance probably carcinogenic to humans).
NTP has classified perchloroethylene as reasonable anticipated to be a human carcinogen.

Reproductive toxicity
One study reported a slight increase in miscarriages for operators of dry cleaning equipment but study authors concluded the increased miscarriages could not be specifically attributed to perchloroethylene exposure. Occupational exposure to perchloroethylene has been associated with taking slightly longer for women to become pregnant and with menstrual disorders. These studies were limited by other potential risk factors and small sample size. Other studies have not found an association between miscarriages and exposure to perchloroethylene. One study suggested that it may take slightly longer for wives of laundry and dry cleaning workers to become pregnant. Sample size for this study was very small and most of the workers were not exposed to perchloroethylene. Animal studies have not shown evidence of adverse effect on reproductive parameters following repeated exposure to perchloroethylene levels up to 300 ppm. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. Increased resorptions, minor skeletal anomalies and subcutaneous edema have been reported in rodent studies. Hyperactivity was observed in adult mice exposed to perchloroethylene in utero. Findings from animal studies indicate perchloroethylene is not teratogenic.

Specific target organ toxicity (STOT) - single exposure
Exposure to 100-200 ppm has been reported to cause irritation to the eyes, throat and nose, headache, light-headedness, and dizziness after several hours exposure. Exposure to concentrations of the order of 500 ppm for short periods of time (e.g. 5 minutes) may lead to

lightheadedness or dizziness. Exposure to levels of 1000 ppm or higher may cause intense respiratory irritation and anesthetic effects. Exposure to high concentrations or prolonged overexposure (500 ppm or greater) has caused unconsciousness and death. Deaths are generally
attributed to ventricular fibrillation and central nervous system depression. Liver and kidney damage have been reported in cases of accidental excessive overexposure to perchloroethylene. Acute and short-term over-exposure to perchloroethylene has been associated with changes in electroencephalographic scores.

Specific target organ toxicity (STOT) - repeated exposure
Repeated exposure to levels well above the occupational exposure limit may produce adverse effects on the lungs, liver, kidneys and skin. Observations in animal studies include: endocrine system effects, immune system effects, and blood disorders. The relevance of these observations to humans is not clear at this time. Perchloroethylene has been associated with cancer in rodents. Extensive evaluations of possible mechanisms have led to the conclusion that they are of little, if any, relevance to man even at high exposure levels. Immunological effects related specifically to perchloroethylene exposure have not been reported in humans. One study, severely limited by technical deficiencies, suggests an association between long-term exposure to solvent-contaminated well water, and changes in immune parameters, and
increased infections. The well water was also contaminated with other chemicals in addition to perchloroethylene. Enhanced susceptibility to infection was reported in one animal study but this study was compromised by high mortality among control animals. Other studies have not shown adverse effects on the immune system in animals exposed to perchloroethylene. A study of human volunteers associated repeated exposure to 100 ppm perchloroethylene with changes in electroencephalographic scores. Some studies have associated repeated exposure with changes in visual-evoked potential and changes in color vision. Overall, studies in dry cleaning workers have not shown evidence of adverse effects on the nervous system. Several studies suggestive of adverse neurological effects in dry cleaning workers were limited by small group size, as well as biased and subjective measurement methods. In view of these shortcomings the significance of these observations is questionable. One animal study associated perchloroethylene exposure with increased latency in visual-evoked potential. Findings from animal studies have shown alterations in the biochemistry of some neurological tissues following repeated exposure but no evidence of pathology (brain lesions). The relevance of these observations to humans is not clear at this time. Repeated exposure to levels well above the occupational exposure limit may produce adverse effects on the liver and kidneys. Exposure to perchloroethylene has been associated with changes in urinary and serum indicators of renal function and liver function. Findings from animal studies indicate the liver and kidney are target organs. Elevated prolactin levels were reported in some female workers exposed to perchloroethylene but these levels were within the normal clinical range. It is unlikely that these observations are biologically relevant. Changes in some blood parameters and evidence of reduced erythropoiesis have been observed in subchronic animal studies. Forestomach ulcers were observed in one animal study following prolonged exposure to perchloroethylene. Adrenal gland hyperplasia was observed in one animal study following prolonged exposure to perchloroethylene. Other animal studies indicated no evidence of adverse effects on the blood, stomach or adrenal glands.

Aspiration hazard
The ATE (gas inhalation) of the mixture is: 22500 ppmV.

Additional information
Synergistic Materials: Consumption of alcoholic beverages may increase potential for development of toxic effects resulting from exposure to this product.

SECTION 12: Ecological information

Toxicity
Perchloroethylene
LD50 Dermal - Rabbit - 3,228 mg/kg
LD50 Oral - Rat - 2,629 mg/kg
LC50 Inhalation - Rat - 34,200 mg/m3 - 8 hr

Trans-1,2-dichloroethylene
LD50 Oral - Mouse - 2,122 mg/kg
LC50 Inhalation - Rat - 96 mg/l - 4 hr
EC50 - Daphnia magna (Water flea) - 220 mg/l - 48 hr
EC50 - Selenastrum capricornutum (green algae) - 798 mg/l - 96 hr
EC50 - Skeletonema costatum (marine diatom) - 712 mg/l - 96 hr

Proprietary Fluorinated Compound
LD50 Oral - Rat - 24.8 mg/l (3,010 ppm)
LC50 Inhalation - Rat - >2,000 mg/kg

Petroleum gases, liquified, sweetened, if they contain > 0.1% w/w Butadiene
LC50 Inhalation - Rat - 658 mg/l - 4 hr

Persistence and degradability
Not classified.

Bioaccumulative potential
Bioconcentration factor (BCF) is 38.9 in trout. Perchloroethylene does not significantly bioconcentrate in aquatic organisms or adsorb to sediment.

Mobility in soil
Perchloroethylene can leach rapidly through soil to reach groundwater. Soil adsorption potential is low. Potential for mobility in soil is medium (Koc between 150 and 500). Log soil organic carbon partition coefficient (log Koc) is estimated to be 2.1-3.2.

Other adverse effects
Perchloroethylene released into the environment through spills or through improper handling, storage or disposal of drycleaning process wastes containing perchloroethylene can cause contamination. Such contamination may require expensive remediation under Federal, state or local laws.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Dispose of contents/container in accordance with local, regional, national, and international regulations. Do not pierce or burn, even after use. Transfer solvent residues to a labeled, sealed container for disposal or recovery. Solvent residues must not be allowed to enter drains, sewers, or watercourses or to contaminate the ground. Recovered liquids may be sent to an EPA permitted reclaimer or incineration facility. Contaminated material must be disposed of in a permitted waste management facility.

Waste treatment
Contains material(s) listed by RCRA as a hazardous waste. All disposals of these wastes must be done in accordance with Federal, state and local regulations. Regulations may vary in different locations. Waste characterization and compliance with disposal regulations are the responsibilities of the waste generator. However, in no event should these hazardous wastes be placed onto land or into drains, sewers or septic tank systems.

Sewage disposal
Avoid release into the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Other disposal recommendations
Container may remain hazardous when empty. Continue to observe all precautions. Do not puncture or incinerate container. Product should be fully characterized prior to disposal. Empty containers may contain flammable or combustible vapors. Do not reuse without adequate precautions.

SECTION 14: Transport information

DOT (US)
UN Number: UN1956
Class: 2.2 (6.1)
Packing Group: N/A
Proper Shipping Name: Compressed gas, n.o.s.

IMDG
UN Number: UN1956
Class: 2.2 (6.1)
Packing Group: N/A
EMS Number: N/A
Proper Shipping Name: Compressed gas, n.o.s.

IATA
UN Number: UN1956
Class: 2.2 (6.1)
Packing Group: N/A
Proper Shipping Name: Compressed gas, n.o.s.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

California Prop. 65 Components
The State of California has listed perchloroethylene under Proposition 65 as a chemical known to the state to cause cancer.
Chemical name: Perchloroethylene
CAS number: 127-18-4
04/01/1988 - Cancer

CERCLA (Comprehensive Response, Compensation, and Liability Act)
Perchloroethylene is listed in Table 302.4 of 40 CFR Part 302 as a hazardous substance with a Reportable Quantity of 100 lbs. Releases to air, land or water which exceed the RQ must be reported to the National Response Center, 800-424-8802.
Reportable spill quantity: 7.4 gallons.
RCRA Status: see Section 13.
CAS number: 127-18-4

Massachusetts Right To Know Components
Chemical name: Perchloroethylene
CAS number: 127-18-4

Chemical name: Petroleum gases, liquified, sweetened, if they contain > 0.1% w/w Butadiene
CAS number: 68476-86-8

New Jersey Right To Know Components
Chemical name: Trans-1,2-dichloroethylene
CAS number: 156-60-5

Chemical name: Perchloroethylene
CAS number: 127-18-4

Chemical name: Petroleum gases, liquified, sweetened, if they contain > 0.1% w/w Butadiene
CAS number: 68476-86-8

Common name: TETRACHLOROETHYLENE
CAS number: 127-18-4

Common name: CARBON DIOXIDE
CAS number: 124-38-9

Pennsylvania Right To Know Components
Chemical name: Trans-1,2-dichloroethylene
CAS number: 156-60-5

Chemical name: Perchloroethylene
CAS number: 127-18-4

Chemical name: Petroleum gases, liquified, sweetened, if they contain > 0.1% w/w Butadiene
CAS number: 68476-86-8

Chemical name: CARBON DIOXIDE
CAS number: 124-38-9

SARA 311/312 Hazards
Acute Health Hazard, Sudden Release of Pressure Hazard, Chronic Health Hazard

SARA 313 Components
Perchloroethylene is subject to the reporting requirements of Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) and 40 CFR Part 372.
CAS number: 127-18-4

Toxic Substances Control Act (TSCA) Inventory
All chemicals are listed or exempt.

15.2 Chemical Safety Assessment
After December 8, 2026 this chemical substance (as defined in TSCA section 3(2))/product cannot be distributed in commerce to retailers for any use. After March 8, 2027, this chemical substance (as defined in TSCA section 3(2))/product is and cant only be distributed in commerce or processed with a concentration of PCE equal to or greater than 0.1% by weight for the following purposes: (1) Processing as a reactant/intermediate; (2) Processing into formulation, mixture, or reaction product; (3) Processing by repackaging; (4) Recycling; (5) Industrial and commercial use a solvent in open-top batch vapor degreasing; (6) Industrial and commercial use as a solvent in closed-loop batch vapor degreasing; (7) Industrial and commercial use in maskant for chemical milling; (8) Industrial and commercial use as a processing aid in catalyst regeneration in petrochemical manufacturing; (9) Industrial and commercial use as a processing aid in sectors other than petrochemical manufacturing; (10) Industrial and commercial use as a solvent for cold cleaning of tanker vessels; (11) Industrial and commercial use

as energized electrical cleaner; (12) Industrial and commercial use as laboratory chemicals; (13) Industrial and commercial use in solvent-based adhesives and sealants; (14) Industrial and commercial use in dry cleaning in 3rd generation machines until December 20, 2027; (15) Industrial and commercial use in all dry cleaning and related spot cleaning until December 19, 2034; (16) Export; and (17) Disposal.

SECTION 16: Other information

N/A = Not applicable; N/D = Not determined

16.1 Further information/disclaimer

To the best of our knowledge, information contained herein is accurate. However there is no assumption of liability for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazard which exists. The information contained in this SDS was obtained from current and reliable sources; however, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions of handling, storage and disposal of this product are beyond the control of the manufacturer, the manufacturer will not be responsible for loss, injury, or expense arising out of the products improper use. No warranty, expressed or inferred, regarding the product described in this SDS shall be created or inferred by any statement in this SDS. Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this SDS. The user is responsible for full compliance.

16.2 Preparation information

Prepared by: Jessica Wilson
Date prepared: 1-24-2025