



1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: K1016A
LGW Cleaning Solvent

Product Use: Precision cleaner

MANUFACTURER/DISTRIBUTOR:

Miller-Stephenson Chemical
55 Backus Ave.
Danbury, Conn. 06810 USA
(203) 743-4447

Emergency Phone Number:
(800) 424-9300

2. HAZARDS IDENTIFICATION

Physical Hazard: Gases under pressure – Liquefied Gas

Label elements:



Single Word: Warning

Hazard Statements

Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statements: Use personal protective equipment as required.
Pressurized container: Do not pierce or burn, even after use.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Physical and Chemical Hazards: Aerosol container can explode when heated, because of pressure build-up. Vapors are heavier than air and may travel along the floor and will displace oxygen for breathing. The aerosol has a limited amount in the container, so if used properly the risk is considered small.

3. INGREDIENTS

<u>Material (s)</u>	<u>CAS No.</u>	<u>Approximate %</u>
Trans-1-Chloro-3,3,3-trifluoropropene	102687-65-0	75 – 85
Trans-1,3,3,3-Tetrafluoroprop-1-ene	29118-24-9	18 – 22

4. FIRST AID MEASURES

Inhalation: Immediately remove patient to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen, provided a qualified operator is present. Get medical attention immediately.

Eye: Remove contact lenses from eyes. Immediately flush with large amounts of water, lifting eyelids until no evidence of the chemical remains. Get medical attention.

Skin: Remove contaminated clothing and shoes. Flush promptly with plenty of water. Get medical attention if necessary. Wash contaminated clothing before re-use.

Oral: Is not considered a potential route of exposure. DO NOT INDUCE VOMITING without medical advice. Immediately rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Notes to Physician: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

Extinguishing media: This product is not flammable. Use the media appropriate for surrounding materials. Water spray, Carbon dioxide (CO₂), Dry Chemical, Foam.

Fire and Explosion: Aerosol cans may rupture under fire conditions.

Hazardous decomposition products: In case of fire, forming Hydrogen fluoride Gaseous hydrogen chloride, Carbon monoxide, Carbon dioxide, Carbonyl halides.

Specific Hazards: This product is not flammable at ambient temperatures and atmospheric pressure. However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources. Avoid contact with flame and hot surfaces because can burst and toxic decomposition products may form. Cool closed containers exposed to fire with water spray. Do not allow run-off from the fire-fighting to enter drains or water courses. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Protective Equipment for Fire-Fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Evacuate personnel. Ventilate area, especially low and enclosed places, where heavy vapors might collect. Remove all ignition sources. Wear personal protective equipment, if a large amount is accidentally released. No need for additional release information, since it is an aerosol.

7. HANDLING AND STORAGE

Handling: Avoid inhalation of vapors. Use in a well-ventilated area to keep employee exposure below recommended limits. Vapors are heavier than air and accumulate in low areas. Do not get in eyes or on skin. Wear personal protective equipment. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 122°F/50°C. Protect cans from physical damage. Do not puncture or drop cans, expose them to open flame or excessive heat. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.

Storage Conditions: Store in a clean, dry place, not near sources of heat, in direct sunlight or where temperatures exceed 122°F/50°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Exposure Limits:</u>	<u>TWA (ACGIH)</u>	<u>PEL (OSHA)</u>	<u>TWA (Honeywell)</u>
Trans-1,3,3,3-Tetrafluoroprop-1-ene	Not Established	Not Established	800 ppm
Trans-1-Chloro-3,3,3-trifluoropropene	Not Established	Not Established	800 ppm

Respiratory Protection: Avoid breathing vapors. Local exhaust should be used when large amounts are released. If necessary to keep exposure limits below permissible limits, wear suitable respiratory equipment. Wear a positive-pressure supplied-air respirator. In poorly ventilated areas, or if a large release occurs, use an approved self-contained breathing apparatus (SCBA).

Eye Protection: Avoid eye contact. Use chemical splash goggles.

Skin Protection: Use impervious gloves when necessary.

Hygiene Measures: Avoid breathing vapors, and mist. Avoid contact with skin and eyes. Provide adequate ventilation, especially in confined areas. Wash hands after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N.A.

Percent Volatile by Volume: 100%

Density: 1.27 g/cc at 68°F/20°C

Vapor Pressure: N.A.

Vapor Density (Air=1): N.A.

Solubility in H₂O: Approx. 1.90 g/l at 68°F/20°C

Appearance: Clear Liquid

Odor: Slight

10. STABILITY AND REACTIVITY

Stability: Stable at normal storage conditions.

Material and Conditions to Avoid: Do not store above 122°F/50°C. Keep away from direct sunlight. Protect from heat, flames and sparks. Do not mix with oxygen or air above atmospheric pressure. Avoid alkali metals, strong oxidizing agents, powdered Magnesium, and Aluminum.

Decomposition: Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc) forming products containing Carbon monoxide, Carbon dioxide, Carbonyl halides, Gaseous hydrogen chloride, and Gaseous hydrogen fluoride.

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

No component in this product, at levels greater than or equal to 0.1%, is identified as a known or anticipated carcinogen by IARC, NTP or OSHA.

Trans-1,3,3,3-Tetrafluoroprop-1-ene

Acute Oral toxicity: Not applicable – Study technically not feasible.

Acute Inhalation toxicity: 4 hour, LC50 rat: >207000 ppm

Acute Dermal toxicity: No data available – Study technically not feasible.

Skin irritation: No skin irritation in rabbits. Method: OECD Test Guideline 404

Eye irritation: No data available – Study technically not feasible.

Sensitization: Cardiac sensitization

Species: Dogs

Result: Did not cause sensitization on laboratory animals.

Repeated dose toxicity:

13 Weeks, Inhalation, rat: Causes mild effects on the heart. NOEL 5,000 ppm

Genotoxicity in vitro: In vitro tests did not show mutagenic effects.

Genotoxicity in vivo: In vitro tests did not show mutagenic effects.

Reproductive toxicity: Test Method: Two-generation study, rat, Inhalation: NOEL: >20,000 ppm, NOEL: >20,000 ppm. Method OECD Test Guideline 416

Teratogenicity: Species: Rat; Method: OECD 416; Did not show teratogenic effects in animal experiments.

Other Health Effects: This substance has no evidence of carcinogenic properties.

Trans-1-Chloro-3,3,3-trifluoropropene

Acute Inhalation Toxicity: 4 hour, LC50:120000 ppm in rats.

Skin irritation: Rabbit testing indicates this material is not a skin irritant.

Sensitization: Does not cause skin sensitization. Cardiac sensitization (dogs): 25000 ppm.

Repeated dose toxicity:

4 Weeks, Inhalation, rat: NOEL 4500 ppm Note: Subacute toxicity

Genotoxicity: In vitro and in vivo tests didn't show mutagenic effects.

Reproductive toxicity: Species: rabbit, No-observed-effect level approx. 15,000 ppm

Species: rat, No-observed-effect level approx. 10,000ppm

Teratogenicity: Species: rabbit, No-observed-effect level approx. 15,000 ppm

Species: rat, No-observed-effect level approx. 10,000 ppm

12. ECOLOGICAL INFORMATION

Ecotoxicity effects:

Trans-1,3,3,3-Tetrafluoroprop-1-ene

96 hour NOEC – Cyprinus carpio (Carp): > 117 mg/L

48 hour EC50 – Daphnia magna (Water flea): > 160 mg/L

Toxicity to algae: Growth inhibition: NOEC: > 170 mg/l, Exposure time: 72 h

Bioaccumulation: No bioaccumulation is to be expected (log Pow <=4).

Biodegradability: Aerobic: Not readily biodegradable

Trans-1-Chloro-3,3,3-trifluoropropene

96 hour LC50 – Oncorhynchus mykiss (rainbow trout): 38 mg/l (Method: OECD Test Guideline 203)

48 hour EC50 – Immobilization of Daphnia magna (Water flea): 82 mg/l (Method: OECD Test Guideline 202)

72 hour EC50 – Growth inhibition of Pseudokirchneriella subcapitata (green algae): > 215 mg/l (Method: OECD Test Guideline 201)

72 hour NOEC – Growth rate of Pseudokirchneriella subcapitata (green algae): 115 mg/l (Method: OECD Test Guidelines 201)

13. DISPOSAL CONSIDERATIONS

Comply with federal, state and local regulations. Do not puncture or incinerate cans.

14. TRANSPORT INFORMATION

U.S. DOT

Proper Shipping Name: Consumer Commodity

Hazard Class: ORM-D

Identification No. None

Packing Group: None

IATA

Proper Shipping Name: Aerosols, Non-Flammable

Hazard Class: 2.2

Identification No. UN1950

Packing Group: None

IMDG

Proper Shipping Name: Aerosols, Non-Flammable

Hazard Class: 2.2

Identification No. UN1950

Packing Group: None

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS:

TSCA: All ingredients are listed in TSCA inventory.

SARA 302: No ingredients in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Emission Reporting: None of the ingredients exceed the threshold reporting levels established by SARA Title III, Section 313.

SARA 311/312 HAZARDS: Acute Health Hazard & Sudden Release of Pressure Hazard

US STATE REGULATIONS:

California Proposition 65 Carcinogens and Reproductive Toxins: None of the ingredients are listed.

16. OTHER INFORMATION

HMIS Ratings:

Health - 2

Flammability - 0

Reactivity - 0

Personal Protective rating to be supplied by user depending on the conditions.

FOR INDUSTRIAL USE ONLY

REVISION DATE: OCTOBER 2017

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.