



## 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

**Appearance:** Aerosol, Liquid

**Color:** Colorless

**Odor:** Slight

**GHS Pictogram**

No pictogram required.

**Precautionary Statements:** Avoid breathing vapor/spray.  
Pressurized container: Do not pierce or burn, even after use  
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.  
Store in a well-ventilated area.

**GHS Classification:** Physical and Chemical Hazards: Not Classified  
Human Health: Not Classified  
Environment: Not Classified

**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 (CO<sub>2</sub>), 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:** 66°F/19°C

**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 H<sub>2</sub>O:** 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**

**Inhalation:**

4 hour, LC50 rat: >207000 ppm

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

Method: OECD Test Guideline 40

**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 ppms

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

**Teratogenicity:** 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**

**Inhalation:**

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

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

**Sensitisation:** Does not cause skin sensitization.

**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. 10,000pp

## 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

**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): 106.7 mg/l (Method: OECD Test Guideline 201)

72 hour NOEC – Growth rate of Pseudokirchneriella subcapitata (green algae): 115mg/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: SEPTMEBER 2015**

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.