



INDUSTRIAL MAINTENANCE CLEANER

Non-Flammable, Safe Maintenance Cleaner

1635-20S – 20 oz. Aerosol

Introduction

G3 Industrial Maintenance Cleaner is the choice for all types of cleaning of switches, relays, contact pads and other electrical connections. The innovative cleaner removes oils, greases, silicones, dirt and grime.

Contains a patented formula designed specifically as the replacement for degreasers and contact cleaners containing:

- HCFC-141b (1,1-dichloro-1-fluoroethane, CAS #1717-00-6)
- TCE (Trichloroethylene, CAS #79-01-6)
- nPB (n-Propyl Bromide, CAS #106-94-5)
- Perc (Perchloroethylene, CAS #000127-18-4)

EPA, as part of the Montreal Protocol, has been actively phasing out ozone depleting chemicals. Most recently, this has meant the manufacturing ban of HCFC-141b. While there is still a sell-through period, availability is becoming an issue and prices are skyrocketing. G3 Industrial Contact Cleaner is non-ozone depleting.

G3 Industrial Maintenance Cleaner has a good (high) exposure limit, so it is much safer to use than three common industrial cleaners: TCE, nPB, and Perc. Threshold Limit Value (TLV) is the measure of maximum allowable (acute) exposure in PPM (Parts Per Million). Techspray's G3 Industrial Contact Cleaner has a TLV of 200ppm, in contrast to 10ppm for nPB, 25ppm for Perc, and 50ppm for TCE.

Laboratory testing by Techspray has shown vacuum hoods and similar ventilation only reliably controls exposure down to 58 ppm (see Techspray white paper "N-Propyl Bromide Toxicity Concerns", Jimmy Witcher, October 24, 2002). TCE, nPB, and Perc are not recommended for aerosol cleaning.

G3 Industrial Maintenance Cleaner is ideal for maintenance operations looking for an aerosol cleaner that is safe, non-flammable, and cost effective.

Features / Benefits

- Non-Flammable Aerosol*
- Good Exposure Limit – Superior to TCE, nPB, and Perc
- Powerful Cleaner – Spray Blasts Off Soil
- Excellent Degreaser
- Rapid Evaporation
- Low Residue
- Low Odor
- Non-Ozone Depleting

* *Meets industry flame extension standards for non-flammable aerosols. However, it does contain some flammable ingredients.*

Applications

- Aerosols used in hand-cleaning operations where top priority is efficiency and portability.
- Parts cleaning, maintenance, industrial, utility, transit
- Electrical cleaning of switches, relays, contact pads and other electrical connections

Chemical Components

| Component | CAS# |
|--|----------|
| 1,2-transdichloroethylene (Trans)..... | 156-60-5 |
| 2-Propanol | 67-63-0 |
| 1,1,1,2-Tetrafluoroethane (HFC-134a) | 811-97-2 |
| Carbon dioxide..... | 124-38-9 |

Chemical Properties (MSDS available on request)

- PHYSICAL STATE: Liquid
- ODOR: Faint ethereal odor
- COLOR: Clear
- PERCENT VOLATILE: 100
- FLASHPOINT (METHOD): 36°F (TAG CC)
- EVAPORATION RATE: TBD
- VAPOR PRESSURE: TBD
- DENSITY: 1.18 g/ml
- VOC: 69% (CARB Compliant)

Comparative Test Data

CLEANING EFFICIENCY

Avg of 3 Test Panels, MIL-PRF-29608 4.5.9, % Efficiency

| Chemistry | Product | SOIL | | |
|--------------------|--------------------------------------|--|---------------------------------------|--|
| | | Silicone Damping Fluid <i>VV-D-1078</i> | Hydraulic Fluid <i>MIL-H-83282</i> | Corrosion Preventative <i>MIL-C-81309</i> |
| G3* | 1635-20S G3 Industrial Maint Cleaner | 99% | 99% | 99% |
| G3* | 1630-16S G3 Maintenance Cleaner | 100% | 100% | 99% |
| Hydrocarbon | 1620-10S Ecoline Maintenance Cleaner | 100% | 100% | 99% |
| HFE/Vertrel | 03205 CRC NT Precision | 98% | 98% | 93% |
| nPB | 03110 CRC Super Degreaser | 99% | 98% | 99% |
| Perc | 03180 CRC Quick Clean | 100% | 99% | 100% |
| TCE | 3070-19S Degreaser NF | 99% | 98% | 100% |

*Proprietary blend, U.S. Patent No. 5,902,412

Environmental Policy

Techspray® is committed to developing products to ensure a safer and cleaner environment. We will continue to meet and sustain the regulations of all federal, state and local government agencies.

Licensing Restriction

The use of this product for cleaning is subject to U.S. Patent No. 5,902,412 and use is restricted by Techspray.

Packaging and Availability

G3 Industrial Maintenance Cleaner available in the following sizes:

| | |
|----------|--------------------|
| 1635-20S | 20 oz. Aerosol Can |
| | 12 cans/case |

MATERIAL SAFETY DATA SHEET



MSDS No: 1635-20S

G3 Industrial Maintenance Cleaner

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: G3 Industrial Maintenance Cleaner

PRODUCT DESCRIPTION: Electronic Maintenance Cleaner

PRODUCT CODE: 1635-20S

ACTIVE INGREDIENT(S): 1,2-transdichloroethylene (Trans); 1,1,1,2-Tetrafluoroethane (HFC-134a); Carbon dioxide

MANUFACTURER

Techspray, L.P.

2. HAZARDS IDENTIFICATION

HAZARD DESIGNATION

"Xn" - Harmful

R20 - Harmful by inhalation.

"Xi" - Irritant

R36/37/38 - Irritating to eyes, respiratory system and skin.

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Transparent, colorless liquid.

IMMEDIATE CONCERNS: Warning! High concentrations of vapor can reduce oxygen available for breathing. Harmful if inhaled. May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products.

POTENTIAL HEALTH EFFECTS

EYES: Substance causes substantial eye irritation.

SKIN: Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INGESTION: Substance may be harmful if swallowed.

INHALATION: High concentrations in immediate area can displace oxygen and can cause dizziness, unconsciousness, and possibly death with longer exposure. Keep people away from such vapors without self-contained breathing apparatus.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Liquid splashed in the eye may cause redness, irritation and conjunctivitis.

SKIN: Prolonged exposure causes redness, pain, drying and cracking of the skin.

MATERIAL SAFETY DATA SHEET



MSDS No: 1635-20S

G3 Industrial Maintenance Cleaner

INGESTION: For large amounts; abdominal pain, nausea and vomiting.

INHALATION: High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

ACUTE TOXICITY: Overexposure may cause dizziness and loss of concentration. At higher levels, CNS depression and cardiac arrhythmia may result.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name | Wt. % | CAS | EINECS |
|--------------------------------------|---------|----------|-----------|
| 1,2-transdichloroethylene (Trans) | 50 - 70 | 156-60-5 | 205-860-2 |
| 2-Propanol | 1 - 5 | 67-63-0 | 200-661-0 |
| 1,1,1,2-Tetrafluoroethane (HFC-134a) | 25 - 35 | 811-97-2 | 212-337-0 |
| Carbon dioxide | 1 - 3 | 124-38-9 | |

4. FIRST AID MEASURES

EYES: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.

SKIN: Immediately flush skin with plenty of water. Remove clothing. Get medical attention immediately. Wash clothing separately before reuse.

INGESTION: If swallowed, gently wipe or rinse the inside of the mouth with water. DO NOT induce vomiting. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Immediately contact a poison control center, emergency room or physician as further treatment may be necessary.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: 3.3°C (38°F) TAG CC

Notes: Non-propellant material ("cold fill") only.

EXTINGUISHING MEDIA: Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

FIRE FIGHTING PROCEDURES: Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

FIRE FIGHTING EQUIPMENT: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products are hazardous. This compound can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids - possibly carbonyl halides.

MATERIAL SAFETY DATA SHEET



MSDS No: 1635-20S

G3 Industrial Maintenance Cleaner

liquid contact, wear splash-proof goggles.

SKIN: Gloves of the following materials may provide protection against permeation: Viton, solvex, Buna, Butyl, and Neoprene.

RESPIRATORY: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES: Wash hands before eating and wash before reuse.

OTHER USE PRECAUTIONS: Emergency shower and eyewash facility should be in close proximity.

9. PHYSICAL AND CHEMICAL PROPERTIES

| Chemical Name | Flash Point | Boiling Point (°C) | Freezing Point (°C) | Solubility in Water | Specific Gravity |
|--------------------------------------|-------------|--------------------|---------------------|---------------------|------------------|
| 1,2-transdichloroethylene (Trans) | 36 | 48 | -50 | slight | 1.257 |
| 2-Propanol | 53.6 | 82.4 | | | 0.785 |
| 1,1,1,2-Tetrafluoroethane (HFC-134a) | | -26.4 | -101 | NEGLIGIBLE | 1.21 |

ODOR: Faint ethereal odor

APPEARANCE: Clear, Colorless liquid

pH: Not Applicable

PERCENT VOLATILE: 100

VAPOR PRESSURE: 167.67 mmHg@20C (VOC Composite Vapor Pressure) at 20°C (68°F)

FLASHPOINT AND METHOD: 3.3°C (38°F) TAG CC

Notes: Non-propellant material ("cold fill") only.

EVAPORATION RATE: < 1 (TCE=1)

DENSITY: 1.1819

(VOC): 68.500 % by weight

COMMENTS: This product meets the California Air Resources Board VOC cap of 75 wt % for the Electronic Cleaner category.

10. STABILITY AND REACTIVITY

STABILITY: Stable.

POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Stable. However, may decompose if heated.

HAZARDOUS DECOMPOSITION PRODUCTS: When exposed to high temperatures or flames this product may form hydrochloric and hydrofluoric acids - possibly carbonyl halides.

MATERIAL SAFETY DATA SHEET



MSDS No: 1635-20S

G3 Industrial Maintenance Cleaner

| Chemical Name | Wt.% | CERCLA RQ |
|-----------------------------------|---------|-----------|
| 1,2-transdichloroethylene (Trans) | 50 - 70 | 1000 lbs. |

CERCLA RQ: Trans-1,2-dichloroethylene is listed in Table 302.4 of 40 CFR Part 302 as a hazardous substance. Reportable Quantity = 1,000 lbs.

EPA

EPA RQ INGREDIENT: trans-1,2-dichloroethylene (# 156-60-5)

TSCA (TOXIC SUBSTANCE CONTROL ACT)

| Chemical Name | CAS |
|--------------------------------------|----------|
| 1,2-transdichloroethylene (Trans) | 156-60-5 |
| 2-Propanol | 67-63-0 |
| 1,1,1,2-Tetrafluoroethane (HFC-134a) | 811-97-2 |

TSCA REGULATORY: All chemicals in this product are listed on the TSCA Inventory.

CLEAN AIR ACT

| Chemical Name | Wt.% | CAS |
|--------------------------------------|---------|----------|
| 1,1,1,2-Tetrafluoroethane (HFC-134a) | 25 - 35 | 811-97-2 |

CALIFORNIA PROPOSITION 65: This product does not contain any chemicals known to the State of California to cause cancer.

OSHA HAZARD COMM. RULE: Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM): This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS CLASS: Class A, Class D2B.

EUROPEAN COMMUNITY

EEC LABEL SYMBOL AND CLASSIFICATION



"Xn" - Harmful
R20 - Harmful by inhalation.



"Xi" - Irritant
R36/37/38 - Irritating to eyes, respiratory system and skin.

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.