Section: 1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: D-5440NS
Chemical Family: Dry Lubricant
Manufacturer: Zip-Chem Products
400 Jarvis Drive
Morgan Hill, CA 95037
For Additional Product Information: 1 (800) 648-2661
In Emergency: 1 (800) 424-9300

Section: 2 COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

FOR EXPOSURE LIMITS SEE SECTION 8
FOR OTHER TOXICOLOGICAL INFORMATION SEE SECTION 11

HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Descriptive Name</th>
<th>CAS Number</th>
<th>Percentage Range</th>
<th>Hazard Type per CFR 1910.1200</th>
<th>Exposure Limits</th>
<th>LD$_{50}$</th>
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<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>5%</td>
<td>Physical Hazard; Flammable</td>
<td>OSHA PEL-400 ppm</td>
<td>Not Determined</td>
<td>Not Determined</td>
<td>No</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>7%</td>
<td>Hazard: Toxic</td>
<td>OSHA PEL-200 ppm</td>
<td>5628mg/kg</td>
<td>64000 ppm</td>
<td>No</td>
</tr>
<tr>
<td>Dimethyl Ether</td>
<td>115-10-6</td>
<td>40-45%</td>
<td>Physical Hazard; Flammable Gas</td>
<td>OSHA PEL-1000 ppm</td>
<td>Not Determined</td>
<td>164000 ppm</td>
<td>No</td>
</tr>
<tr>
<td>1,1- Difluoroethane</td>
<td>75-37-6</td>
<td>40-45%</td>
<td>Physical Hazard; Flammable Gas</td>
<td>ACGIH TLV-1000 ppm</td>
<td>Not Determined</td>
<td>&gt;20000 ppm</td>
<td>No</td>
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</table>

Section: 3 HAZARDS IDENTIFICATION

PHYSICAL HAZARDS:

ACUTE HEALTH EFFECTS: Breathing high concentrations of vapors may cause temporary nervous system depression with anesthetic effects such as dizziness, headache, or nausea.

CHRONIC HEALTH EFFECTS: Prolonged exposure to extremely high concentrations of the vapors may lead to narcosis, cardiac irregularities, unconsciousness or death.

IATA CLASSIFICATION: Flammable according to IATA 3.2.5.2.b.

FLAME PROJECTION TEST: Not flammable according to the flame projection test (IATA 3.2.5.2.a, ASTM D 3065, FSHA Sec. 1500.45)

HMIS RATINGS:

Health: 1
Flammability: 2
Reactivity: 0

TDG CLASS AND DIVISION:

TDG CLASS AND DIVISION: Class 2 Aerosol Containers

WHMIS CLASS AND DIVISION: Class B, Division 5 Flammable Aerosols

Protective Equipment: E
DO NOT USE EPINEPHRINE IN CONJUNCTION WITH THIS MATERIAL.
EYES: May be an eye irritant. Flush immediately with water for 15 minutes and take to physician.
SKIN: Wash affected area, treat for frostbite if necessary, and consult a physician if irritation persists.
INGESTION: Call a physician and/or transport to emergency facility immediately. Do not induce vomiting so as to avoid aspiration of material into the lungs.
INHALATION: Remove from exposure and restore breathing. Seek medical attention.

Section: 5 FIRE AND EXPLOSION HAZARDS

FLAMMABILITY DATA:
- FLAMMABLE/COMBUSTIBLE/PYROPHORIC: Not flammable
- FLASH POINT AND METHOD: Not Determined
- AUTOIGNITION TEMPERATURE: Not established

FLAMMABLE LIMITS AT NORMAL TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR):
- LEL: 3.4%
- UEL: 18.0%

NFPA WAREHOUSE LEVEL (per NFPA 30B): 1

EXPLOSION DATA:
- SENSITIVITY TO MECHANICAL IMPACT: Not Sensitive
- SENSITIVITY TO STATIC DISCHARGE: Not Sensitive

EXTINGUISHING MEDIA: Foam, Alcohol Foam, CO2, Dry Chemical, Water Fog

FIRE FIGHTING TECHNIQUES AND COMMENTS: Use standard firefighting techniques to fight fires involving this material

HAZARDOUS COMBUSTION PRODUCTS: Hydrochloric and hydrofluoric acids, possibly carbonyl halides at high temperatures.

Section: 6 ACCIDENTAL SPILL/RELEASE INFORMATION

FOR ALL TRANSPORTATION ACCIDENTS CALL CHEMTREC AT 1-800-424-9300.

REPORTABLE QUANTITY: Not Applicable

SPILL MITIGATION PROCEDURES:
- Stop source of spill as soon as possible and notify appropriate personnel. Burn around spill area to prevent spill from spreading. Ventilate area. Do not flush into sewers.

AIR RELEASE:
- Vapors may be suppressed by use of water fog or spray. Contain all liquid for treatment or neutralization.

WATER RELEASE:
- Contain liquid for treatment.

LAND SPILL:
- Create a trench to contain materials. Spilled materials may be contained using sand, clay, earth or a commercial absorbent. Do not place materials back in their original container.

SPILL RESIDUES:
- Dispose of per guidelines under section 13, DISPOSAL CONSIDERATIONS.
PERSONNEL PROTECTION FOR EMERGENCY SPILL AND FIRE FIGHTING SITUATIONS:
Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to gloves, apron, and safety glasses.

Section: 7 HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES WASH OFF WITH WATER.

STORAGE CONDITIONS:
Store in a cool, dry, well-ventilated place.
STORE AT TEMPERATURES BELOW 120°F. DO NOT STORE OR USE NEAR HEAT, SPARKS, OR FLAMES. AVOID BREATHING VAPORS. VAPORS ARE HEAVIER THAN AIR AND WILL COLLECT IN LOW AREAS AND OTHER CONFINED AREAS.

PRODUCT STABILITY AND COMPATIBILITY:
SHELF LIFE LIMITATIONS: 36 months from date of shipment
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Sodium, potassium, calcium, powdered aluminum, magnesium, and zinc.
INCOMPATIBLE MATERIALS FOR PACKAGING: N/A

Section: 8 PREVENTIVE MEASURES

PERSONAL PROTECTION FOR ROUTINE USE OF THIS PRODUCT:
SKIN AND EYE PROTECTIVE EQUIPMENT: Impervious gloves are recommended to prevent skin contact. Safety glasses to prevent eye contact are recommended.

ENGINEERING CONTROLS
VENTILATION: Local or mechanical to keep Section II ingredients below their exposure limits.

EQUIPMENT SPECIFICATIONS (WHEN APPLICABLE):
RESPIRATOR TYPE: Use a dust respirator
PROTECTIVE CLOTHING TYPE: (This includes; gloves, boots, apron, protective suit):
Impervious gloves, safety glasses

WASTE DISPOSAL:
Spilled material collected in absorbent material should be transferred to steel disposal or recovery drums. If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste under Subpart D. If this product becomes a waste, it should be disposed of in accordance with local, state and federal regulations by incineration.
Zip-Chem Products  
D-5440NS  
Material Safety Data Sheet

Section: 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE (gas, liquid, solid): Liquid  
APPEARANCE: White  
ODOR: Mild odor  
FREEZING POINT: Not Determined  
BOILING RANGE: Not Determined  
DECOMPOSITION TEMPERATURE: Not Determined  
SPECIFIC GRAVITY (H2O=1): 0.79  
BULK DENSITY: 6.6 lbs/gal @ 70 Deg F  
pH @ 25 Deg C: Not Applicable  
VAPOR PRESSURE @ 25 Deg C: Not Determined  
SOLUBILITY IN WATER: Negligible  
VOLATILES, PERCENT BY WEIGHT: 98%  
EVAPORATION RATE: Faster than Ether  
VAPOR DENSITY: Heavier than air  
MOLECULAR WEIGHT: Not applicable/mixture  
COEFFICIENT OF OIL/WATER DISTRIBUTION: Not Applicable  
VOLATILE ORGANIC COMPOUND (VOC) G/L: 449 grams/Liter

Section: 10 STABILITY AND REACTIVITY DATA

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:  
MECHANICAL SHOCK OR IMPACT: No  
ELECTRICAL (STATIC) DISCHARGE: No  
HAZARDOUS POLYMERIZATION: Will Not Occur  
INCOMPATIBLE MATERIALS: Alkali or alkaline earth metals- Sodium, potassium, calcium, powdered aluminum, magnesium, and zinc.  
CONDITIONS OF REACTIVITY: None known  
HAZARDOUS DECOMPOSITION PRODUCTS: Hydrochloric and hydrofluoric acids, possibly carbonyl halides at high temperatures.
Section: 11 TOXICOLOGICAL PROPERTIES

ROUTES OF ABSORPTION
Inhalation of high concentrations may cause heart irregularities, unconsciousness, or death.

WARNING STATEMENTS AND WARNING PROPERTIES:
DO NOT TAKE INTERNALLY. MAY CAUSE FROSTBITE.

SIGNS, SYMPTOMS AND EFFECTS OF EXPOSURE

INHALATION
ACUTE: Nausea, dizziness, and/or heart irregularities may occur from breathing high concentrations.
CHRONIC: Breathing extremely high concentrations of the vapors may lead to anesthetic effects such as dizziness, headache, or nausea. Prolonged exposure to extremely high concentrations of vapor may lead to narcosis, cardiac irregularities, unconsciousness or death.

SKIN
ACUTE: May cause irritation or burning sensation as well as frostbite.
CHRONIC: Prolonged or repeated contact may cause dermatitis, exercise due care.

EYE
May cause irritation.

INGESTION
ACUTE: May cause nausea or vomiting.
CHRONIC: If large quantities are swallowed, do not induce vomiting as it might cause aspiration of vomitus into the lungs. Take to a physician immediately.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.
INTERACTIONS WITH OTHER CHEMICALS THAT ENHANCE TOXICITY: Do not use epinephrine in conjunction with this material.
ACUTE TARGET ORGAN TOXICITY: No organs known to be damaged from exposure to this product.
CHRONIC TARGET ORGAN TOXICITY: There are no known effects from repeated exposure.
REPRODUCTIVE AND DEVELOPMENTAL TOXICITY: There are no known or reported effects on reproductive function or fetal development.
CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO
MUTAGENICITY: This product is not known to be mutagenic.
EXPOSURE LIMITS: Not Determined

Section: 12 ECOLOGICAL INFORMATION

AQUATIC TOXICITY: None known or reported.

Section: 13 DISPOSAL CONSIDERATIONS

Spilled material collected in absorbent material should be transferred to steel disposal or recovery drums.

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste under Subpart D.
If this product becomes a waste, it should be disposed of in accordance with local, state and federal regulations by incineration.

Section: 14 TRANSPORT INFORMATION

DOT SHIPPING NAME: Consumer Commodity
DOT HAZARD CLASS: ORM-D
DOT PACKING GROUP: None
DOT REPORTABLE QUANTITY: None found in 49 CFR 172.101
Section: 15 REGULATORY INFORMATION

INTERNATIONAL
All components of this product are listed on the following inventories: MITI (Japan) EINECS (EEC) DSL (Canada).

FEDERAL
TOXIC SUBSTANCES CONTROL ACT (TSCA):
The components of this product are listed on the TSCA inventory.
SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III (SARA):
Section 302/304
Requires emergency planning based on 'Threshold Planning Quantities' (TPQs), and release reporting based on Reportable Quantities (RQs) of 'Extremely Hazardous Substances' (EHS) listed in Appendix A of 40 CFR 355. There are no components of this material with known CAS numbers that are on the EHS list.

Section 311 & 312
Based upon the available information, this material and/or components is classified as a health and/or physical hazards according to Section 311 & 312:

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Section 313
This material does not contain chemicals with known CAS numbers subject to the reporting requirements of SARA Title III, Section 313 and 40 CFR 372:

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
This material does not contain chemical(s) with known CAS numbers classified as hazardous substances subject to the reporting requirements of CERCLA (40 CFR 302) and to the release reporting requirements of SARA (Section 302) based on reportable quantities (RQs).

OSHA Regulations
'Chemical-specific' U. S. Occupational Safety and Health Administration (OSHA) regulations (1910.1002 to 1910.1050) presented under 29 CFR 1910 do not apply to this material or its components.

Other EPA Regulations
No additional information available.
State

California Safe Drinking Water and Toxic Enforcement Act of 1988- Proposition 65
This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels that would be subject to the proposition.

California South Coast Air Quality Management District (SCAQMD) Rule 443.1 (VOC's)
A Volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, 1,1,1-trichloroethane, methylene chloride, FC-23, CFC-113, CFC-12, CFC-11, CFC-22, CFC-114, and CFC-115. By this definition, this is a VOC material.

Massachusetts Right to Know Substance List (MSL) [105 CMR 670.000]
Hazardous Substances (MSL-HS) on the MSL must be identified when present in materials at levels greater than state specified criterion. The criterion is: >=1%. Components with CAS numbers present in this material at a level which could require reporting under the statute are:

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Extraordinarily Hazardous Substances (MSL-EHS) on the MSL must be identified when present in materials at levels greater than state specified criterion. The criterion is >= 0.0001%. There are no materials present that could require reporting under this statute.

Pennsylvania Right to Know Hazardous Substance List
Hazardous Substances (PA-HS) must be identified when present in materials at levels greater than the state specified criterion. The criterion is >=1%. Components with CAS numbers present in this material at a level that could require reporting under the statute are:

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Section: 16 PREPARATION INFORMATION

REVISION INFORMATION: Periodic review
PREPARED BY: J Smith
APPROVAL DATE: 8/26/09
SUPERSEDES: 6/21/06

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