ZECOL™

Effective Date: June 1, 2015

Product #(s) – 132

Safety Data Sheet

For Emergency Call:
CHEM-TEL (800) 255-3924 24 Hour Assistance

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Zecol Engine Degreaser 12/14.5 oz.

CAS Number: 68476-34-6 / 68477-31-6 / 111-76-2 / 9019-45-9 / 124-38-9
Recommended Uses: Engine Degreaser
Company Identification
Manufacturer's Name: ZECOL PRODUCTS COMPANY
Address: 4635 Willow Drive, Medina, MN 55340
Telephone – General Information: (763) 478-3438

2. HAZARDS IDENTIFICATION

Hazard Classes: Flammable Liquid Category 4
Gases Under Pressure Compressed Gas
Skin Corrosion/Irritation Category 2
Serious Eye Damage/Irritation Category 2A
Specific Target Organ Toxicity Single Exposure Category 3
Specific Target Organ Toxicity Repeat Exposure Category 2
Aspiration Hazard Category 1
Carcinogenicity Category 2
Aquatic Toxicity-Long Term Category 2

Signal Word: WARNING

Hazard Statements:

H227	Combustible Liquid.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airway.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs though prolonged and repeated skin contact.
H351	Suspected of causing cancer by skin contact.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children,
P103	Read label before use.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from flames and hot surfaces – No smoking.
P233	Keep container tightly closed.

P261	Avoid breathing vapors or mists.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves / protective clothing / eye protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331	Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332 + P313	IF skin irritation occurs: Get medical advice/attention.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P312	Call POISON CENTER or doctor if you feel unwell.
P370 + P378	In case of fire: Use dry chemical, CO_2, alcohol-resistant foam, and water spray for extinction.
P391	Collect spillage.
P 410 + P403 + P233	Protect from sunlight. Store in well-ventilated place. Keep container tightly closed.
P501	Disposal: Dispose of contents/container to a specialized waste disposal plant in accordance with local/regional regulations

Hazard Pictograms:

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Typical Weight Percentage	CAS Number
Diesel Fuel No. 2	65-85%	68476-34-6
Distillates, petroleum, catalytic reformer fractionator residue, low-boiling	10-20%	68477-31-6
2-Butoxyethanol	10-20%	111-76-2
Nonylphenol Ethoxylated	0.5-3%	9016-45-9
Carbon Dioxide	4-8%	124-38-9

4. FIRST AID

Eyes: Move victim away from exposure and into fresh air. If irritation or redness develops, flush eyes with clean water and seek medical attention. For direct contact, remove contact lenses if present and easy to do so. Immediately hold eyelids apart and flush the affects eye(s) with clean water for at least 15 minutes. Seek immediate medical attention.

Skin: Remove contaminated shoes and clothing and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand

cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse.

Inhalation: If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion: Aspiration hazard. Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek immediate medical attention.

Medical Conditions: Conditions which may be aggravated by exposure include skin, blood, liver and immune disorders.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, CO2, water spray or alcohol-resistant foam. .Water spray is recommended to cool or protect exposed materials or structures. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Specific Hazards: Contents under pressure. This material is combustible and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights or mechanical/electrical equipment). Keep all sources of ignition away from spill or release. Vapors may travel considerable distances to a source of ignition where they can ignite, flashback or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Vapors are heavier than area and can accumulate in low areas.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide and other products of incomplete combustion.

Special Firefighting Procedures: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Combustible. Do not puncture or incinerate container. Contents under pressure. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. Stay upwind and away from spill/release. For large spills, notify people down-wind of spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water, notify appropriate authorities. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand, earth or other non-combustible material, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g., skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Contents under pressure. Keep away from ignition sources such as heat/sparks/open flames – No smoking. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see Section 8).

Combustible. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practice.

Conditions for Safe Storage: Keep container(s) tightly closed. Use and store this material in cool, dry,well-ventilated areas away from heat and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Distillates, petroleum, catalytic reformer fractionator residue, low-boiling	None	None	None	None
Diesel No. 2	100 ppm (IFV) (skin)	None	None	None
2-Butoxyethanol	20 ppm	None	50 ppm	None
Carbon Dioxide	5000 ppm	30,000 ppm	5000 ppm	None

IFV = inhalable fraction and vapor

Engineering Controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required.

Specific Personal Protective Equipment

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation or injury. Depending on conditions of use, a face shield may be necessary.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: nitrile rubbers.

Respiratory Protection: Where there is potential for airborne exposure above the exposure limits, a NIOSH approved air purifying respirator with an organic vapor cartridge may be used.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Air-purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5% oxygen) situations or under conditions that are immediately dangerous to life and health (IDLH).

Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, colorless to slightly discolored liquid
Odor: Aromatic
Odor threshold: No data
pH: Not applicable
Melting/Freezing Point: Not determined
Boiling Point: 160-343°C / 320-650 °F
Flash Point: 63°C / 145 °F (Tagliabue Closed Cup)
Auto-Ignition Temperature: Not determined
Evaporation rate (butyl acetate = 1): <1
Flammability (solid, gas): Not applicable
Explosive Limits: Lower – 0.9%/ Upper – 6.7%
Vapor Pressure: Not determined
Vapor Density (air = 1): >4.7

Specific gravity (H_20 = 1): 0.88 @ 20°C / 68 °F
Solubility in water: Approximately 27%
Partition Coefficient: No data
Decomposition Temperature: No data
Viscosity: <20 cSt @ 40 °C / 104 °F

10. STABILITY AND REACTIVITY

Stability (thermal, light, etc.): Stable under normal conditions of storage and handling.

Conditions to Avoid: Avoid all possible sources of ignition (see Sections 5 and 7). Do not expose to heat or store at temperatures above 120 °F.

Incompatibility (materials to avoid): Avoid contact with strong acids, alkalies and oxidizers such as liquid chlorine and oxygen.

Hazardous Decomposition Products: Thermal decomposition may release carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Product/Ingredient Name	Result (estimated based on similar materials)	Species	Dose
Zecol Engine Degreaser	LD50 Oral LD50 Dermal LC50 Inhalation (mist)	ATE ATE ATE	>5 g/kg 2175 mg/kg >5 mg/l
Diesel Fuel No. 2	LD50 Oral LD50 Dermal LC50 Inhalation (mist)	Rat Rabbit Rat	>5 g/kg >4.1 g/kg 4.65 mg/l
Distillates, petroleum, catalytic reformer fractionator residue, low-boiling	LD50 Oral LD50 Dermal LC50 Inhalation (mist)	Rat Rabbit Rat	≥5 g/kg >2 g/kg >5.2 mg/l
2-Butoxyethanol	LD50 Oral LD50 Dermal LC50 Inhalation (mist)	Rat Rabbit Rat	1.75 g/kg 435 g/kg 2.17- 2.34 mg/kg
Carbon Dioxide	LC50 Inhalation (gas)	Rat	1807 ppm 4 hr

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause dryness or cracking.

Serious Eye Damage/Irritation: Causes eye irritation.

Signs and Symptoms: High concentrations can cause minor respiratory irritation, shortness of breath, metabolic acidosis, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Continued exposure may cause cyanosis, unconsciousness, coma and death. Ingestion can cause irritation of the digestive tract, nausea, vomiting.

Skin Sensitization: None reported

Respiratory Sensitization: No data found.

Germ Cell Mutagenicity: There is insufficient information available to conclude that this material is mutagenic.

Carcinogenicity: Suspected of causing cancer. Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced through a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation.

This material is not identified as a carcinogen by NTP, IAR or OSHA.

Reproductive Toxicity: There is insufficient information available to conclude that this material is a reproductive toxicant.

Although Carbon Dioxide is not a selective developmental toxicant, developmental effects have been demonstrated as a secondary effect of hypoxia and/or respiratory acidosis in the mother.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure. Repeated dermal application of petroleum gas oils for 90 days resulted in decreased liver, thymus, and spleen weights, and altered bone marrow function. Microscopic alterations included liver hypertrophy and necrosis, decreased hematopoiesis and lymphocyte depletion.

Although ethylene glycol butyl ether is not classified as for target organ toxicity, animal data indicates effects on the blood (hemolysis) with secondary effects on the liver and kidney. Human red blood has been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

Aspiration Hazard: May be fatal if swallowed and enters airways.

Other Comments: Diesel engine exhaust has been classified by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a carcinogen.

12. ECOLOGICAL INFORMATION

Toxicity: Experimental studies of gas oils show that acute aquatic toxicity values are typically in the range 2-20 mg/L. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions. They should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment. Classification: H411; Chronic Cat 2.

Persistence and Degradability: Gas oils are complex combinations of individual hydrocarbon species. Based on the known or expected properties of individual constituents, category members are not predicted to be readily biodegradable. Some hydrocarbon constituents of gas oils are predicted to meet the criteria for persistence; on the other hand, some components can be easily degraded by microorganisms under aerobic conditions.

Persistence per IOPC Fund definition: Non-Persistent

Bioaccumulative Potential: Gas oil components have measured or calculated Log Kow values in the range of 3.9 to 6 which indicates a high potential to bioaccumulate. Lower molecular weight compounds are readily metabolized and the actual bioaccumulation potential of higher molecular weight compounds is limited by the low water solubility and large molecular size.

Mobility in Soil: Releases to water will result in a hydrocarbon film floating and spreading on the surface. For the lighter components, volatilization is an important loss process and reduces the hazard to aquatic organisms. In air, the hydrocarbon vapors react readily with hydroxyl radicals with half-lives of less than one day. Photooxidation on the water surface is also a significant loss process particularly for polycyclic aromatic compounds. In water, the majority of components will be adsorbed on sediment. Adsorption is the most predominant physical process on release to soil. Adsorbed hydrocarbons will slowly degrade in both water and soil.

Other Adverse Effects: None known

13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" or characteristic hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

14. TRANSPORT INFORMATION

DOT/TDG Proper Shipping Name: Limited Quantity
DOT/TDG Identification Number: Not applicable
DOT/TDG Hazard Class: Not applicable
DOT/TDG Packing Group: Not applicable
ERG Guide Number: Not applicable

15. REGULATORY INFORMATION

TSCA: This material and/or its components are listed on the TSCA inventory or not regulated by TSCA.

DSL: This material and/or its components are listed on the DSL inventory or are exempt from DSL listing requirements.

OSHA (Occupational Safety and Health Administration): This material is considered to be hazardous as defined by the OSHA Hazard Communication Standard.

This material has not been identified as a carcinogen by NTP, IARC or OSHA.

CERCLA/SARA – Section 302 Extremely Hazardous Substances and TPQ (in pounds): This material does NOT contain chemicals subject to the reporting requirements of SARA 302 and 40 CFR 355 Appendix A and B.

EPA (CERCLA) Reportable Quantity (in pounds): This material does NOT contain chemicals subject to the reporting requirements of 40 CFR 302.4.

CERCLA/SARA - Sections 311/312 (Title III Hazard Categories):
Acute: Yes Chronic: Yes Fire: Yes Reactivity: No Sudden Release of Pressure: Yes

CERCLA/SARA – Section 313 and 40 CFR 372: This material contains the following chemicals subject to the reporting requirements of SARA 313 and SARA Title III and 40 CFR:

Component	Concentration	de minimis
Ethylene Glycol Butyl Ether	1%	1%

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material does NOT contain detectable chemicals known to the State of California to cause cancer and/or reproductive toxicity.

Canada:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations.

WHMIS Hazard Class: A, D2A, D2B

16. OTHER INFORMATION

Issue Date: June 1, 2015
Previous Issue Date: April 24, 2014
Change: Minor wording changes

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The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for this particular purpose and on the condition that he assumes the risk of his use thereof.

Safety Data Sheet

1 - Chemical Product and Company Identification

Trade Name: WD-40 Multi-Use Product Bulk Liquid ***NOT FOR SALE IN CALIFORNIA*** **Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion** **Restrictions on Use: None identified** **MSDS Date Of Preparation: 8/25/15**	**Manufacturer: WD-40 Company** **Address: 1061 Cudahy Place (92110)** **P.O. Box 80607** **San Diego, California, USA** **92138 –0607** **Telephone:** **Emergency only: 1-888-324-7596 (PROSAR)** **Information: 1-888-324-7596** **Chemical Spills: 1-800-424-9300 (Chemtrec)** **1-703-527-3887 (International Calls)**

2 – Hazards Identification

Hazcom 2012/GHS Classification:
Flammable Liquid Category 3
Aspiration Toxicity Category 1

Note: The 1 gallon size product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to larger containers sold for industrial/professional use.

Label Elements:

DANGER!
Flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Prevention
Keep away from heat, sparks, open flames, hot surfaces – No smoking.
Keep container tightly closed.
Ground and bond containers and receiving equipment.
Use explosion-proof electrical equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear eye protection.
Response
IF SWALLOWED: Immediately call a POISON CENTER or physician.
Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
In case of fire: Use water fog, dry chemical, carbon dioxide or foam to extinguish.
Storage
Store locked up.
Store in a well-ventilated place. Keep cool.
Disposal
Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	GHS Classification
Aliphatic Hydrocarbon	64742-47-8	45-50	Flammable Liquid Category 3 Aspiration Toxicity Category 1
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	<35	Not Hazardous
LVP Aliphatic Hydrocarbon	64742-47-8	12-18	Aspiration Toxicity Category 1

Note: The specific chemical identity and exact percentages are a trade secret.

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.
Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.
Signs and Symptoms of Exposure: May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.
Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
Specific Hazards Arising from the Chemical: Combustible liquid and vapor. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.
Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.
Methods and Materials for Containment/Cleanup: Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use with adequate ventilation. Keep away from heat, sparks, hot surfaces and open flames. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children.
Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials. NFPA 30 Class II Liquid.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 (inhalable) TWA ACGIH TLV

	5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)

The Following Controls are Recommended for Normal Consumer Use of this Product
Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Safety glasses or goggles recommended.
Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8.0%
Odor:	Mild petroleum odor	Vapor Pressure:	1 psi @38°C (100°F) ASTM D323
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Open Cup	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas)	Not Applicable	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	412 grams/liter (49.5%)	Pour Point:	-63°C (-81.4°F) ASTM D-97

10 – Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition.
Incompatibilities: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:
Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.
Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
Chronic Effects: None expected.
Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.
Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:
Acute Toxicity Estimates: Oral > 5,000 mg/kg; Dermal >2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms
Persistence and Degradability: Component are readily biodegradable.
Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.
Mobility in Soil: No data available
Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description: Excepted from Hazmat (49CFR 173.150 (F)) in non-bulk packagings. Bulk Packagings: UN1268, Petroleum Distillates, n.o.s., Combustible Liquid, PG III
IMDG Shipping Description: UN1268, Petroleum Distillates, n.o.s. 3, PG III
ICAO Shipping Description: UN1268, Petroleum Distillates, n.o.s. 3, PG III NOTE: WD-40 does not test containers to assure that they meet the pressure differential and other requirements for transport by air. We do not recommend that our products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:
CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
SARA TITLE III:
Hazard Category For Section 311/312: Acute Health, Fire Hazard
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None
EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.
VOC Regulations: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.

Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.
Canadian WHMIS Classification: Class B-3 (Combustible Liquid)
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:
Health – 1 (slight hazard), Fire Hazard – 2 (moderate hazard), Reactivity – 0 (minimal hazard)

Revision Date: August 2015 Supersedes: July 2014

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

Reviewed by: I. Kowalski Regulatory Affairs Department

3069000/No.0015106

ZECOL™

Effective Date: June 1, 2015

Product #(s) – 503

Safety Data Sheet

For Emergency Call:
CHEM-TEL (800) 255-3924 24 Hour Assistance

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Zecol Plus 4 Spray Lubricant 12/9 oz

CAS Number: 64742-47-8 / 11-28-01 / 124-38-9
Recommended Uses: Automotive Lubricant
Company Identification
Manufacturer's Name: ZECOL PRODUCTS COMPANY
Address: 4635 Willow Drive, Medina, MN 55340
Telephone – General Information: (763) 478-3438

2. HAZARDS IDENTIFICATION

Hazard Classes: Flammable Liquid Category 3
Gases Under Pressure Compressed Gas
Skin Corrosion/Irritation Category 2
Specific Target Organ Toxicity Single Exposure Category 3
Aspiration Hazard Category 1
Aquatic Toxicity-Long Term Category 2

Signal Word: WARNING

Hazard Statements:

H226	Flammable Liquid and Vapor.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airway.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children,
P103	Read label before use.
P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical lighting and equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapors.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.

Product #(s) – 503

P280	Wear protective gloves / protective clothing / eye protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331	Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332 + P313	IF skin irritation occurs: Get medical advice/attention.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call POISON CENTER or doctor if you feel unwell.
P370 + P378	In case of fire: Use dry chemical, CO_2, alcohol-resistant foam, and water spray for extinction.
P391	Collect spillage.
P410 + P403 + P233	Protect from sunlight. Store in well-ventilated place. Keep container tightly closed.
P501	Disposal: Dispose of contents/container to a specialized waste disposal plant in accordance with local/regional regulations

Hazard Pictograms:

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Typical Weight Percentage	CAS Number
Hydrotreated Distillate, Light	85-100%	64742-47-8
Oleic Acid	0-5%	11-28-1
Carbon Dioxide	0-5%	124-38-9

4. FIRST AID

Eyes: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Remove contaminated shoes and clothing and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse.

Inhalation: If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion: Aspiration hazard. Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek immediate medical attention.

Medical Conditions: Conditions which may be aggravated by exposure include skin disorders.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, CO2, water spray or alcohol-resistant foam. .Water spray is recommended to cool or protect exposed materials or structures. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Specific Hazards: Contents under pressure. This material is flammable and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights or mechanical/electrical equipment). Flame is invisible in daylight. Vapors may travel considerable distances to a source of ignition where they can ignite, flashback or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Vapors are heavier than area and can accumulate in low areas.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide and other products of incomplete combustion.

Special Firefighting Procedures: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Do not puncture or incinerate container. Contents under pressure. Flammable. Spilling of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. For large spills, notify people down-wind of spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water, notify appropriate authorities. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand, earth or other non-combustible material, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g.,

skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Contents under pressure. Keep away from ignition sources such as heat/sparks/open flames – No smoking. Take precautionary measures against static discharge. Non-sparking tools should be used. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see Section 8).

Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by bonding and grounding containers and equipment before transferring material. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-77 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practice.

Conditions for Safe Storage: Keep container(s) tightly closed. Use and store this material in cool, dry,well-ventilated areas away from heat and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Hydrotreated Distillate, Light (as Kerosene – total hydrocarbon vapor)	200 ppm	None	None	None
Carbon Dioxide	5000 ppm	30,000 ppm	5000 ppm	None

Engineering Controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required.

Specific Personal Protective Equipment

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation or injury. Depending on conditions of use, a face shield may be necessary.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to

prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: nitrile rubbers.

Respiratory Protection: Where there is potential for airborne exposure above the exposure limits, a NIOSH approved air purifying respirator with an organic vapor cartridge may be used.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Air-purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5% oxygen) situations or under conditions that are immediately dangerous to life and health (IDLH).

Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless to pale straw liquid
Odor: Kerosene
Odor threshold: No data
pH: Not applicable
Melting/Freezing Point: <-40 °C / <-40 °F (approximate)
Boiling Point: >149°C / 300 °F
Flash Point: > 37.8°C / >100 °F (Tagliabue Closed Cup)
Auto-Ignition Temperature: 210 °C / 410 °F
Evaporation rate (butyl acetate = 1): <1
Flammability (solid, gas): Not applicable
Explosive Limits: Lower – 0.7%/ Upper – 7%
Vapor Pressure: 0.40 mmHg @ 20 °C / 68 °F
Vapor Density (air = 1): >4.5
Specific gravity (H_20 = 1): 0.76 @ 20°C / 68 °F
Solubility in water: Moderately soluble
Partition Coefficient: No data
Decomposition Temperature: No data
Viscosity: <20.5 cSt @ 40 °C / 104 °F

10. STABILITY AND REACTIVITY

Stability (thermal, light, etc.): Stable under normal conditions of storage and handling.

Conditions to Avoid: Avoid all possible sources of ignition (see Sections 5 and 7). Do not expose to heat or store at temperatures above 120 °F.

Incompatibility (materials to avoid): Avoid contact with strong oxidizers such as liquid chlorine and oxygen.

Hazardous Decomposition Products: Thermal decomposition may release carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Product/Ingredient Name	Result (estimated based on similar materials)	Species	Dose
Hydrotreated Distillate, Light (Major component)	LD50 Oral LD50 Dermal LC50 Inhalation (mist)	Rat Rabbit Rat	≥5 g/kg >2 g/kg >5.2 mg/l
Carbon Dioxide	LC50 Inhalation (gas)	Rat	1807 ppm 4hr

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause dryness or cracking.

Serious Eye Damage/Irritation: Causes mild irritation.

Signs and Symptoms: High concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Continued exposure may cause cyanosis, unconsciousness, coma and death. Ingestion can cause irritation of the digestive tract, nausea, vomiting.

Skin Sensitization: None reported

Respiratory Sensitization: No data found.

Germ Cell Mutagenicity: There is insufficient information available to conclude that this material is mutagenic.

Carcinogenicity: Not expected to cause cancer. Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced though a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation.

This material is not identified as a carcinogen by NTP, IAR or OSHA.

Reproductive Toxicity: Although Carbon Dioxide is not a selective developmental toxicant, developmental effects have been demonstrated as a secondary effect of hypoxia and/or respiratory acidosis in the mother.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): Not expected to cause target organ effects from repeated exposure.

Aspiration Hazard: May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Toxicity: Acute aquatic toxicity studies on similar hydrocarbons, samples of jet fuel and kerosene streams, show acute toxicity values greater than 1 mg/L. These tests were carried out on water accommodated fractions, in closed systems to prevent evaporative loss. Results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon composition. Kerosene should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment. Classification: H411; Chronic Category 2

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable but are regarded as inherently biodegradable since their hydrocarbon components can be degraded by microorganism.

Bioaccumulative Potential: Hydrocarbon constituents of kerosene show measured or predicted Log Kow values ranging from 3 to 6 and above and therefore are regarded as having the potential to bioccumulate. In practice, metabolic processes may prevent this effect or limit bioavailability.

Mobility in Soil: On release to water, hydrocarbons will float on the surface and since they are sparingly soluble, the only significant loss is volatilization to air. It is possible that some of the higher molecular weight hydrocarbons will be adsorbed on sediment. Biodegradation in water is a minor loss process. In air, these hydrocabons are photodegraded by reaction with hydroxyl radicals with half-lives varying from 0.1 to 0.7 days.

Other Adverse Effects: None known

13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic of ignitability (D001). See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

14. TRANSPORT INFORMATION

DOT/TDG Proper Shipping Name: Petroleum Distillates, n.o.s. (hydrotreated distillate, light)
DOT/TDG Identification Number: UN1268
DOT/TDG Hazard Class: 3
DOT/TDG Packing Group: III
ERG Guide Number: 128
Marine Pollutant: Aquatic toxicity studies indicate material may be classified as a Marine Pollutant. This classification impacts bulk and water shipments.

15. REGULATORY INFORMATION

TSCA: This material and/or its components are listed on the TSCA inventory or not regulated by TSCA.

DSL: This material and/or its components are listed on the DSL inventory or are exempt from DSL listing requirements.

OSHA (Occupational Safety and Health Administration): This material is considered to be hazardous as defined by the OSHA Hazard Communication Standard.

This material has not been identified as a carcinogen by NTP, IARC or OSHA however, components are listed by IARC (see Section 11).

CERCLA/SARA – Section 302 Extremely Hazardous Substances and TPQ (in pounds): This material does NOT contain chemicals subject to the reporting requirements of SARA 302 and 40 CFR 355 Appendix A and B.

EPA (CERCLA) Reportable Quantity (in pounds): This material does NOT contain chemicals subject to the reporting requirements of 40 CFR 302.4.

CERCLA/SARA - Sections 311/312 (Title III Hazard Categories):
Acute: Yes Chronic: No Fire: Yes Reactivity: No Sudden Release of Pressure: Yes

CERCLA/SARA – Section 313 and 40 CFR 372: This material does NOT contain chemicals subject to the reporting requirements of SARA 313 and SARA Title III and 40 CFR:

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material does NOT contain detectable chemicals known to the State of California to cause cancer and/or reproductive toxicity.

Canada:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations.

WHMIS Hazard Class: A, B2

16. OTHER INFORMATION

Issue Date: June 1, 2015
Previous Issue Date: August 7, 2012
Change: Minor wording changes

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for this particular purpose and on the condition that he assumes the risk of his use thereof.

ZECOL™

Effective Date: June 1, 2015

Product #(s) – 510, 511

Safety Data Sheet

For Emergency Call:
CHEM-TEL (800) 255-3924 24 Hour Assistance

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Zecol Starting Fluid 7.2 oz. (204G)
Zecol Starting Fluid 10.5 oz. (298G)

CAS Number: 142-82-5 / 60-29-7 / 74-98-6 / 75-28-5 / 124-38-9 / 64742-52-5
Recommended Uses: Lubricant
Company Identification
Manufacturer's Name: ZECOL PRODUCTS COMPANY
Address: 4635 Willow Drive, Medina, MN 55340
Telephone – General Information: (763) 478-3438

2. HAZARDS IDENTIFICATION

Hazard Classes: Flammable Liquid Category 1
Gases Under Pressure Compressed Gas
Skin Corrosion/Irritation Category 2
Specific Target Organ Toxicity (Single Exposure) Category 3
Aspiration Hazard Category 1
Aquatic Toxicity-Acute Category 1
Aquatic Toxicity-Long Term Category 1

Signal Word: DANGER

Hazard Statements:

H224	Extremely Flammable Liquid and Vapor.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H410	Very Toxic to aquatic life with long lasting effects.

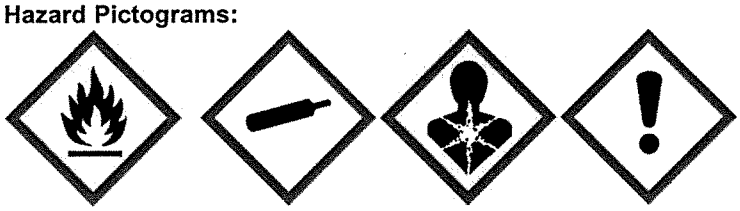
Precautionary Statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children,
P103	Read label before use.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical lighting and equipment.
P242	Use only non-sparking tools.

Product #(s) – 510, 511

P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapors.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves / protective clothing / eye protection.
P301 + P310	If SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331	Do NOT induce vomiting.
P330	Rinse mouth.
P303 + P361 + P353	If ON SKIN (or hair): Remove/Take of immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Move victim to fresh air and keep comfortable for breathing.
P308 + P311	IF exposed or concerned: Call a POISON CENTER or doctor/physician
P361 + P378	Take off immediately all contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use dry chemical, CO_2, alcohol-resistant foam, and water spray for extinction.
P410 + P403 + P235	Protect from sunlight. Store in a well-ventilated place. Keep cool.
P501	Disposal: Dispose of contents/container to a specialized waste disposal plant in accordance with local/regional regulations

Hazard Pictograms:



3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Typical Weight Percentage	CAS Number
Heptane	40-50%	142-82-5
Diethyl Ether	23-30%	60-29-7
Propane	15-25%	74-98-6
Iso-Butane	5-15%	75-28-5
Carbon Dioxide	2-10%	124-38-9
Lubricating Base Oil	0-5%	64742-52-5

4. FIRST AID

Eyes: If irritation or redness develops, flush eyes with clean water. If irritation persists, seek medical attention.

Skin: Remove contaminated shoes and clothing and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse.

Inhalation: If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek medical attention.

Ingestion: Aspiration hazard. Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek immediate medical attention.

Note to Physicians: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Medical Conditions: Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing skin disorders may be more susceptible to this effect (see Note to Physician above).

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, CO2, water spray or alcohol-resistant foam. .Water spray is recommended to cool or protect exposed materials or structures. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Specific Hazards: Contents under pressure. This material is extremely flammable and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights or mechanical/electrical equipment). Flame is invisible in daylight. Vapors may travel considerable distances to a source of ignition where they can ignite, flashback or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Vapors are heavier than area and can accumulate in low areas.

Hazardous Combustion Products: Toxic gases and vapors; oxides of carbon and formaldehyde.

Special Firefighting Procedures: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Flammable. Do not puncture or incinerate container. Contents under pressure. Spilling of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. For large spills, notify people down-wind of spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water, notify appropriate authorities. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand, earth or other non-combustible material, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g., skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Contents under pressure. Keep away from ignition sources such as heat/sparks/open flames – No smoking. Take precautionary measures against static discharge. Non-sparking tools should be used. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see Section 8).

Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by bonding and grounding containers and equipment before transferring material. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-77 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practice.

Conditions for Safe Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Product #(s) – 510, 511

Exposure Guidelines

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Heptane	400 ppm	500 ppm	500 ppm	None
Diethyl Ether	400 ppm	500 ppm	400 ppm	None
Propane	Simple Asphyxiant*	None	1000 ppm	None
Iso-butane	None	1000 ppm	1000 ppm	None
Carbon Dioxide	5000 ppm	30,000 pm	5000 ppm	None
Lubricant Base Oil (as Oil Mist, if generated)	5 mg/m^3	10 mg/m^3	5 mg/m^3	None

Note: Oxygen levels should be maintained above 19.5

Engineering Controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required.

Specific Personal Protective Equipment

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation or injury. Depending on conditions of use, a face shield may be necessary.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls or encapsulated suits. Suggested protective materials: butyl and nitrile rubbers.

Respiratory Protection: Where there is potential for airborne exposure above the exposure limits, a NIOSH approved air purifying respirator with an organic vapor cartridge may be used.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Air-purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5% oxygen) situations or under conditions that are immediately dangerous to life and health (IDLH).

Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. PHYSICAL AND CHEMICAL PROPERTIES (approximate values)

Appearance: Colorless to pale yellow liquid
Odor: Pungent sweet
Odor threshold: No data
pH: Not applicable
Melting/Freezing Point: -115.5°C / <-176°F (estimated)
Boiling point (at 1 atm): -42.2°C / -44 °F (estimated)
Flash Point: -23 °C / -10 °F (estimated)
Auto-Ignition Temperature: 180°C / 356°F (estimated)
Evaporation rate (butyl acetate = 1): >1
Flammability (solid, gas): Not applicable
Explosive Limits: Lower – 1.2%/ Upper – 6.7% (estimated)
Vapor Pressure: Not determined
Vapor Density (air = 1): approx.. >1.5
Specific gravity (H_20 = 1): 0.82
Solubility in water: Partially soluble
Partition Coefficient: Not determined
Decomposition Temperature: No data
Viscosity: <20.5cSt @ 40 °C

10. STABILITY AND REACTIVITY

Stability (thermal, light, etc.): Stable under normal conditions of storage and handling.

Conditions to Avoid: Avoid all possible sources of ignition (see Sections 5 and 7). Do not expose to heat or store at temperatures above 120 °F.

Incompatibility (materials to avoid): Avoid contact with nitric acid and oxidizers such as liquid chlorine and oxygen.

Hazardous Decomposition Products: Thermal decomposition may release carbon monoxide, carbon dioxide and explosive peroxides.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Product/Ingredient Name	Result	Species	Dose
Zecol Starting Fluid	LD50 Oral	ATE	>5 g/kg
	LD50 Dermal	ATE	>2 g/kg
	LC50 Inhalation	ATE	>5 mg/l
Heptane	LD50 Oral	Rat	>5 g/kg
	LD50 Dermal	Rabbit	>2 g/kg
	LC50 Inhalation (vapor)	Rat	>29.29 mg/l- 4hr
Diethyl Ether	LD50 Oral	Rat	1.6 g/kg
	LD50 Dermal	Rabbit	20 g/kg

	LC50 Inhalation (vapor)	Rat	95 mg/l – 2hr
Propane	LC50 Inhalation (gas)	Rat	539,600 ppm – 2hr
Iso-butane	LC50 Inhalation (gas)	Rat	539,600 ppm – 2hr
Carbon Dioxide	LC50 Inhalation (gas)	Rat	1807 ppm 4 hr
Lubricating Base Oil	LD50 Oral LD50 Dermal LC50 Inhalation (mist)	Rat Rabbit Rat	>5 g/kg >2 g/kg >5.2 mg/l

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause dryness or cracking.

Serious Eye Damage/Irritation: May cause mild eye irritation.

Signs and Symptoms: High concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue, Ingestion can cause irritation of the digestive tract, nausea and vomiting,

Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.

Skin Sensitization: None reported

Respiratory Sensitization: None reported

Germ Cell Mutagenicity: None of the components have been identified as mutagens.

Carcinogenicity: None of the components have been identified as a carcinogen by NTP, IARC or OSHA.

Reproductive Toxicity: Although Carbon Dioxide is not a selective developmental toxicant, developmental effects have been demonstrated as a secondary effect of hypoxia and/or respiratory acidosis in the mother.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): None reported.

Aspiration Hazard: May be fatal if swallowed and enters airways.

Other Comments: High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus.

Product #(s) – 510, 511

12. ECOLOGICAL INFORMATION

Toxicity: Aquatic toxicity studies on heptane identify it as: H410; Chronic Category 1 and H400; Acute Category 1

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable but are regarded as inherently biodegradable since their hydrocarbon components can be degraded by microorganism.

Other Adverse Effects: None known

13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

Recycle wherever possible. Large volumes may be suitable for re-distillation or, if contaminated, incinerated. Can be disposed of in a sewage treatment facility.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the characteristic of ignitability (D001). See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

14. TRANSPORT INFORMATION

DOT/TDG Proper Shipping Name: Limited Quantity
DOT/TDG Identification Number: Not applicable
DOT Hazard Class: Not applicable / **TDG Hazard Class:** Not applicable
DOT/TDG Packing Group: Not applicable
ERG Guide Number: Not applicable

15. REGULATORY INFORMATION

TSCA: All components are listed on the TSCA inventory.

DSL: All components are listed on the DSL inventory.

OSHA (Occupational Safety and Health Administration): This material is considered to be hazardous as defined by the OSHA Hazard Communication Standard.

This material has not been identified as a carcinogen by NTP, IARC or OSHA

CERCLA/SARA – Section 302 Extremely Hazardous Substances and TPQ (in pounds): This material does NOT contain chemicals subject to the reporting requirements of SARA 302 and 40 CFR 355 Appendix A and B.

Product #(s) – 510, 511

EPA (CERCLA) Reportable Quantity (in pounds): This material does NOT contain chemicals subject to the reporting requirements of 40 CFR 302.4

CERCLA/SARA - Sections 311/312 (Title III Hazard Categories):
Acute: Yes Chronic: No Fire: Yes Pressure: Yes Reactivity: No

CERCLA/SARA – Section 313 and 40 CFR 372: This material does NOT contain chemicals subject to the reporting requirements of SARA 313 and SARA Title III and 40 CFR:

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material does NOT contain detectable chemicals known to the State of California to cause cancer and/or reproductive toxicity.

Canada:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations.

WHMIS Hazard Class: A, B2, D2B

16. OTHER INFORMATION

Issue Date: June 1, 2015
Previous Issue Date: April 24, 2014
Change: Minor wording changes

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for this particular purpose and on the condition that he assumes the risk of his use thereof.

ZECOL™

Effective Date: June 1, 2015

Product #(s) - 505

Safety Data Sheet

For Emergency Call:
CHEM-TEL (800) 255-3924 24 Hour Assistance

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Zeco Silicone Lubricant 12/10 oz

CAS Number: 67-64-1 / 142-82-5 / 74-98-6 / 683148-62-9 / 68476-86-8
Recommended Uses: Lubricant
Company Identification
Manufacturer's Name: ZECOL PRODUCTS COMPANY
Address: 4635 Willow Drive, Medina, MN 55340
Telephone – General Information: (763) 478-3438

2. HAZARDS IDENTIFICATION

Hazard Classes: Flammable Liquid Category 2
Gases Under Pressure Compressed Gas
Serious Eye Damage/Eye Irritation Category 2
Skin Corrosion/Irritation Category 2
Specific Target Organ Toxicity (Single Exposure) Category 3
Aspiration Hazard Category 1
Aquatic Toxicity-Acute Category 1
Aquatic Toxicity-Long Term Category 1

Signal Word: DANGER

Hazard Statements:

H225	Highly Flammable Liquid and Vapor.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H410	Very Toxic to aquatic life with long lasting effects.

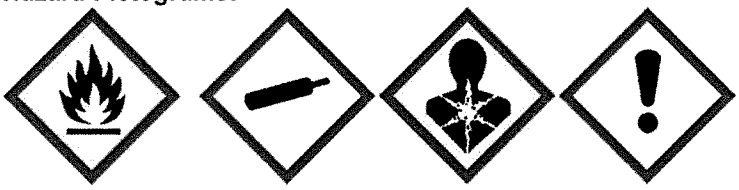
Precautionary Statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children,
P103	Read label before use.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.

Product #(s) - 505

P241	Use explosion-proof electrical lighting and equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapors.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves / protective clothing / eye protection.
P301 + P310	If SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331	Do NOT induce vomiting.
P330	Rinse mouth.
P303 + P361 + P353	If ON SKIN (or hair): Remove/Take of immediately all contaminated clothing. Rinse skin with water/shower.
P361 + P378	Take off immediately all contaminated clothing and wash it before reuse.
P304 + P340	IF INHALED: Move victim to fresh air and keep comfortable for breathing.
P308 + P311	IF exposed or concerned: Call a POISON CENTER or doctor/physician
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P370 + P378	In case of fire: Use dry chemical, CO_2, alcohol-resistant foam, and water spray for extinction.
P410 + P403 + P235	Protect from sunlight. Store in a well-ventilated place. Keep cool.
P501	Disposal: Dispose of contents/container to a specialized waste disposal plant in accordance with local/regional regulations

Hazard Pictograms:



3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Typical Weight Percentage	CAS Number
Acetone	38-42%	67-64-1
Heptane	36-40%	142-82-5
Propane-Butane Propellant	8-12%	68476-86-8
Propane	6-8%	74-98-6
Polydimethyl Siloxanes	2-4%	63148-62-9

4. FIRST AID

Eyes: Move victim away from exposure and into fresh air. If irritation or redness develops, flush eyes with clean water and seek medical attention. For direct contact, remove contact lenses if present and easy to do so. Immediately hold eyelids apart and flush the affects eye(s) with clean water for at least 15 minutes. Seek immediate medical attention.

Skin: Remove contaminated shoes and clothing and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse.

Inhalation: If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek medical attention.

Ingestion: Aspiration hazard. Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek immediate medical attention.

Note to Physicians: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Medical Conditions: Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing skin disorders may be more susceptible to this effect (see Note to Physician above).

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, CO2, water spray or alcohol-resistant foam. .Water spray is recommended to cool or protect exposed materials or structures. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Specific Hazards: Contents under pressure. This material is highly flammable and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights or mechanical/electrical equipment). Flame is invisible in daylight. Vapors may travel considerable distances to a source of ignition where they can ignite, flashback or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Vapors are heavier than area and can accumulate in low areas.

Hazardous Combustion Products: Toxic gases and vapors; oxides of carbon and formaldehyde.

Special Firefighting Procedures: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or

dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Flammable. Do not puncture or incinerate container. Contents under pressure. Spilling of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. For large spills, notify people down-wind of spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water, notify appropriate authorities. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand, earth or other non-combustible material, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g., skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Contents under pressure. Keep away from ignition sources such as heat/sparks/open flames – No smoking. Take precautionary measures against static discharge. Non-sparking tools should be used. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see Section 8).

Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by bonding and grounding containers and equipment before transferring material. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-77 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practice.

Conditions for Safe Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Post area "No Smoking or

Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Acetone	250 ppm	500 ppm	1,000 ppm	None
Heptane	400 ppm	500 ppm	500 ppm	None
Propane / Butane Propellant	Simple Asphyxiant *	1000 ppm (Butane)	1000 ppm	None
Propane	Simple Asphyxiant *	None	1000 ppm	None

Note: Oxygen levels should be maintained above 19.5%
NIC = Notice of Intended Changes

Engineering Controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required.

Specific Personal Protective Equipment

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation or injury. Depending on conditions of use, a face shield may be necessary.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls or encapsulated suits. Suggested protective materials: butyl and nitrile rubbers.

Respiratory Protection: Where there is potential for airborne exposure above the exposure limits, a NIOSH approved air purifying respirator with an organic vapor cartridge may be used.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Air-purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5% oxygen) situations or under conditions that are immediately dangerous to life and health (IDLH).

Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. PHYSICAL AND CHEMICAL PROPERTIES (approximate values)

Appearance: Colorless to pale yellow liquid
Odor: Mild
Odor threshold: No data
pH: Not applicable
Melting/Freezing Point: 43.3°C / <-110°F
Boiling point (at 1 atm): 90.6°C / 195 °F
Flash Point: -9.4 °C / 15 °F (estimated)
Auto-Ignition Temperature: Not determined
Evaporation rate (butyl acetate = 1): >1
Flammability (solid, gas): Not applicable
Explosive Limits: Lower – 1.2%/ Upper – 6.7% (estimated)
Vapor Pressure: 2.3 psia @ 100 °F
Vapor Density (air = 1): approx.. 3.5
Specific gravity (H_20 = 1): 0.82
Solubility in water: Negligible
Partition Coefficient: Not determined
Decomposition Temperature: No data
Viscosity: <20.5cSt @ 40 °C

10. STABILITY AND REACTIVITY

Stability (thermal, light, etc.): Stable under normal conditions of storage and handling.

Conditions to Avoid: Avoid all possible sources of ignition (see Sections 5 and 7). Do not expose to heat or store at temperatures above 120 °F.

Incompatibility (materials to avoid): Avoid contact with strong acids, bases and oxidizers such as liquid chlorine and oxygen.

Hazardous Decomposition Products: Thermal decomposition may release carbon monoxide, carbon dioxide, silica and formaldehyde.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Product/Ingredient Name	Result	Species	Dose
Zecol Silicone Lubricant	LD50 Oral	ATE	>5 g/kg
	LD50 Dermal	ATE	>2 g/kg
	LC50 Inhalation	ATE	>5 mg/l
Acetone	LD50 Oral	Rat	5.8 g/kg
	LD50 Dermal	Rabbit	>15.8 g/kg

Heptane	LD50 Oral LD50 Dermal LC50 Inhalation (vapor)	Rat Rabbit Rat	>5 g/kg >2 g/kg >29.29 mg/l- 4hr
Propane	LC50 Inhalation (gas)	Rat	539,600 ppm – 2hr
Polydimethyl siloxanes	LD50 Oral LD50 Dermal	Rat Rat	>5 g/kg >2 g/kg

Note:

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause dryness or cracking.

Serious Eye Damage/Irritation: Causes serious eye irritation.

Signs and Symptoms: High concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue, Ingestion can cause irritation of the digestive tract, nausea and vomiting,

Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.

Skin Sensitization: None reported

Respiratory Sensitization: None reported

Germ Cell Mutagenicity: None of the components have been identified as mutagens.

Carcinogenicity: None of the components have been identified as a carcinogen by NTP, IARC or OSHA.

Reproductive Toxicity: None reported.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): None reported.

Aspiration Hazard: May be fatal if swallowed and enters airways.

Other Comments: High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus.

12. ECOLOGICAL INFORMATION

Toxicity: Aquatic toxicity studies on heptane identify it as: H410; Chronic Category 1 and H400; Acute Category 1

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable but are regarded as inherently biodegradable since their hydrocarbon components can be degraded by microorganism.

Other Adverse Effects: None known

13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

Recycle wherever possible. Large volumes may be suitable for re-distillation or, if contaminated, incinerated. Can be disposed of in a sewage treatment facility.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic of ignitability (D001). See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

14. TRANSPORT INFORMATION

DOT/TDG Proper Shipping Name: Flammable Liquid n.o.s (acetone)
DOT/TDG Identification Number: UN1993
DOT Hazard Class: 3 / **TDG Hazard Class:** 3 (6.1)
DOT/TDG Packing Group: II
ERG Guide Number: 131
Marine Pollutant: No

15. REGULATORY INFORMATION

TSCA: All components are listed on the TSCA inventory.

DSL: All components are listed on the DSL inventory.

OSHA (Occupational Safety and Health Administration): This material is considered to be hazardous as defined by the OSHA Hazard Communication Standard.

This material has not been identified as a carcinogen by NTP, IARC or OSHA

CERCLA/SARA – Section 302 Extremely Hazardous Substances and TPQ (in pounds): This material does NOT contain chemicals subject to the reporting requirements of SARA 302 and 40 CFR 355 Appendix A and B.

EPA (CERCLA) Reportable Quantity (in pounds): This material contains the following chemicals subject to the reporting requirements of 40 CFR 302.4.

Component	Concentration	RQ
Acetone	38-42%	5000 lbs

CERCLA/SARA - Sections 311/312 (Title III Hazard Categories):
Acute: Yes Chronic: No Fire: Yes Pressure: Yes Reactivity: No

CERCLA/SARA – Section 313 and 40 CFR 372: This material does NOT contain chemicals subject to the reporting requirements of SARA 313 and SARA Title III and 40 CFR:

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material does NOT contain detectable chemicals known to the State of California to cause cancer and/or reproductive toxicity.

Canada:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations.

WHMIS Hazard Class: A, B2, D2B

16. OTHER INFORMATION

Issue Date: June 1, 2015
Previous Issue Date: April 24, 2014
Change: Minor wording changes

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