**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

Product #(s) – 510, 511

**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**.

Product #(s) – 510, 511

## 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 |

Product #(s) – 510, 511

| | | | |
|---|---|---|---|
| | 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<br>LD50 Dermal<br>LC50 Inhalation (mist) | Rat<br>Rabbit<br>Rat | >5 g/kg<br>>2 g/kg<br>>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.