Effective Date: May 10, 2016

Product #(s) – 13212

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

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 *A*TE 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: May 10, 2016
Previous Issue Date: June 1, 2015
Change: Minor wording changes

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