Effective May 10, 2016

Product #(s) –98306, 98355

Safety Data Sheet

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

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Zecol Multi-Max Anti-Freeze and Coolant

CAS Number: 107-21-1 / 111-46-6
Recommended Uses: Anti-Freeze
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: Acute Toxicity – Oral Category 4
Specific Target Organ Toxicity (Repeat Exposure) Category 2
Note: Assigned to classification based on human experience

Signal Word: Warning

Hazard Statements:

H302	Harmful if swallowed.
H336	May cause drowsiness or dizziness.
H373	May cause damage to the kidneys through prolonged or repeated exposure if swallowed.

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.
P260	Do not breathing vapors.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in well ventilated areas.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor fi you feel unwell.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P314	Call POISON CENTER or doctor if you feel unwell.
P501	Disposal: Dispose of contents/container to a specialized waste disposal plant in accordance with local/regional regulations

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Hazard Pictograms:

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Typical Weight Percentage	CAS Number
Ethylene Glycol	80-95%	107-21-1
Diethylene Glycol	0-5%	111-46-6
2-Ethyl Hexanoic Acid, Sodium Salt	>1 to <5%	19766-89-3
Neodecanoic Acid, Sodium Salt	>1 to <5%	31548-27-3

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 cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek medical attention.

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 immediate medical attention.

Ingestion: If swallowed, seek emergency medical attention. If victim is drowsy or unconscious and vomiting, place on left side with head down and do not give anything by mouth to an unconscious person. Do not induce vomiting unless told to by physician or poison center.

Notes to Physicians: Ethanol is antidotal and its early administration may clock the formation of nephrotoxic metabolites of ethylene glycol in the liver. The objective is to rapidly achieve and maintain a blood ethanol level of approximately 100 mg/dl by giving a loading dose of ethanol followed by a maintenance dose. Intravenous administration of ethanol is the preferred route. Ethanol blood levels should be checked frequently. Hemodialysis may be required.

4-Methyl pyrazol (Fomepizole®), a potent inhibitor of alcohol dehydrogenase, has been used therapeutically to decrease the metabolic consequences of ethylene glycol poisoning. Fomepizole® is easier to use clinically than ethanol, does not cause central nervous system depression or hypoglycemia and requires less monitoring than ethanol. Additional therapeutic modalities which may decrease the adverse consequences of ethylene glycol metabolism are the administration of both thiamine and pyridoxine. As there are complicated and serious overdoses, we recommend you consult with the toxicologists at your poison control center.

The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. The combination of metabolic acidosis, an osmol gap and oxalate crystals in the urine is evidence of ethylene glycol poisoning.

There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing and dysphagia.

Medical Conditions: Conditions aggravated by exposure may include skin and kidney 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. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Specific Hazards: None known.

Hazardous Combustion Products: Carbon oxides

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. Cool equipment exposed to fire with water, if it can be done with minimal risk.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: None anticipated

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.

Methods for Containment and Clean-Up: 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: 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.

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Conditions for Safe Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	ACGIH CEILING	OSHA PEL	OSHA STEL
Ethylene Glycol	None (NIC 25 ppm$^{(IFV, P)}$)	100 mg/m^3 (aerosol only) (NIC 50 ppm $^{(IFV, P)}$)	None	None
Diethylene Glycol	None	None (no STEL)	None	None
2-Ethyl Hexanoic Acid, Sodium Salt	None	None	None	None
Neodecanoic Acid, Sodium Salt	None	None	None	None

NIC = Notice of intended changes IFV = Inhalable fraction and vapor. P=Conditions of negligible aerosol exposures

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.

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: Neoprene or PVC.

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: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

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 based on propylene glyco)

Appearance: Yellow liquid
Odor: Characteristic
Odor threshold: No data
pH: 8.7 to 9.2
Melting/Freezing Point: 171.1˚C **/** 340˚F
Boiling point (at 1 atm): 184˚C / 363 ˚F
Flash Point: >110 ˚C / >230 ˚F Setaflash
Auto-Ignition Temperature: Non-flammable
Evaporation rate (butyl acetate = 1): No data
Flammability (solid, gas): Not applicable
Explosive Limits: Non-flammable
Vapor Pressure: <0.1 @ 20˚C / 68 ˚F
Vapor Density (air = 1): No data
Specific gravity (H_20 = 1): 1.07-1.14 @ 20˚C / 68 ˚F
Solubility in water: Soluble
Partition Coefficient: No data
Decomposition Temperature: No data
Viscosity: No data

10. STABILITY AND REACTIVITY

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

Conditions to Avoid: None

Incompatibility (materials to avoid): Avoid contact with strong acids, strong bases at high temperatures, strong oxidizers and materials reactive with hydroxyl compounds.

Hazardous Decomposition Products: Decomposition products can include oxides of carbon.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: Harmful if swallowed.

Product/Ingredient Name	Result	Species	Dose
Ethylene Glycol	LD50 Oral LD50 Dermal LC50 Inhalation (aerosol)	Mouse Rabbit Rat	7.7 g/kg 3.52 g/kg >2.5 mg/l – 6hr (highest dose tested)
Diethylene Glycol	LD50 Oral LD50 Dermal LC50 Inhalation (aerosol)	Rat Rabbit Rat	16.5 mg/kg 13.3 mg/kg >4.6 mg/l – 6hr (highest

			dose tested)

Note: Assigned to classification based on human experience and not animal data.

Skin Corrosion/Irritation: Causes mild irritation.

Serious Eye Damage/Irritation: Causes mild irritation.

Signs and Symptoms: High concentrations can cause irritation of the nose and throat. Ingestion can cause irritation of the digestive tract, coughing, nausea, vomiting, central nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination and fatigue), abdominal pain, pulmonary edema, visual disturbances, convulsions and coma

Skin Sensitization: None reported

Respiratory Sensitization: None reported

Germ Cell Mutagenicity: In vitro and in vivo studies with ethylene and diethylene glycol were negative.

Carcinogenicity: Ethylene and diethylene glycol have not been classified as carcinogens. They are not listed by NTP, IARC or OSHA.

Reproductive Toxicity: Although not classified, ethylene glycol has demonstrated effects on the developing fetus. The relevance of these findings to humans is uncertain.

Specific Target Organ Toxicity (Single Exposure): Ethylene and diethylene glycol, may cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): Severe kidney damage which may be fatal may follow ingestion of ethylene and diethylene glycol. Although not classified, there is some evidence of liver damage from exposure to ethylene and diethylene glycol

12. ECOLOGICAL INFORMATION

Toxicity: Material is practically non-toxic to aquatic organisms on an acute basis.

Ingredient Name	Result	Species	Exposure
Ethylene Glycol	LC50 = 72860 mg/l fresh water EC50 > 100 mg/l fresh water LC50 = 6500 mg/l fresh water NOEC >15.3 g/l fresh water NOEC =100mg/l fresh water	Fish Daphnia Algae *F*ish Invertebrate	96 hours 48 hours 96 hours 7 days 7 days
Diethylene Glycol	LC50 = 75200 mg/l fresh water EC50 > 10000 mg/l fresh water NOEC =8590 mg/l fresh water	Fish Daphnia Invertebrate	96 hours 48 hours 7 days

Persistence and Degradability: Ethylene and diethylene glycol biodegrade easily in water.

Bioaccumulative Potential: Risk of bioaccumulation of ethylene and diethylene glycol is low (BCF <100 and low log K_{ow} <3). BCF = <1 - <10 $LogP_{ow}$ = -1.36 – 1.98

Mobility in Soil: Ethylene and diethylene glycol have very low Henry's constant (0.1327 and 0.000206 Pa m^3/mol), volatilization from natural bodies of water or moist soil is not expected to be an important fate process. Potential for mobility in soil is very high (Koc = 0).

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 hazardous waste. Use which results in chemical or physical change of this material could subject it to additional regulation as a hazardous waste.

14. TRANSPORT INFORMATION

DOT/TDG Proper Shipping Name: Not regulated
DOT/TDG Identification Number: Not regulated
DOT Hazard Class: None / **TDG Hazard Class:** None
DOT/TDG Packing Group: Not regulated
ERG Guide Number: Not regulated
Marine Pollutant: No

15. REGULATORY INFORMATION

TSCA: Components are listed on the TSCA inventory.

DSL: 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 chemicals subject to the reporting requirements of 40 CFR 302.4:

Component	Concentration	RQ

Ethylene Glycol	80-95%	5000 lbs

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

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

Component	Concentration	de minimis
Ethylene Glycol	80-95%	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: D2A

16. OTHER INFORMATION

Issue Date: May 10, 2016
Previous Issue Date: June 1, 2015
Change: Updated Sec. 14

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