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**MATERIAL SAFETY DATA SHEET**

**FORMULA C465**

MSDS No. 108466.2      Warning! May cause irritation. Contains ethylene glycol. Harmful  
Date 10/29/03      or fatal if swallowed. May cause damage to brain, kidney or liver.  
Emergency Number :      Avoid breathing vapor or mist. Keep container closed. Use with  
Chemtrec : 800/424-9300      adequate ventilation. Wash thoroughly after handling. For industrial  
use only; not for household use.

General Information :  
INTAC : 630/739-0606

**SECTION I - IDENTIFICATION**

Product : Isuzu Long Life Coolant C465 (After Market Use for Gasoline Engine)  
Synonyms : Antifreeze Formula C465  
Chemical Family : Ethylene Glycol solution of salts  
Cas RN : Mixture - no single Cas number applicable

**SECTION II - INGREDIENTS**

<u>Components</u>	<u>Cas RN</u>	<u>Nominal %</u>	<u>PEL/TLV</u>	<u>Hazard</u>
Ethylene Glycol	107-21-1	85-92%	Ceiling : 50 ppm (125 mg/m) [vapor and Mist]	Respiratory irritant Ingestion may produce liver, brain and kidney damage.
Diethylene glycol	111-46-4	Less than 5%	None	Ingestion may produce liver and kidney damage.

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**SECTION II - INGREDIENTS**

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<u>Components</u>	<u>Cas RN</u>	<u>Nominal %</u>	<u>PEL/TLV</u>	<u>Hazard</u>
Hydrated inorganic acid, organic acid salts	pro-proprietary	Less than 7%	PEL-TWA : 10 mg/m TLV-TWA : 1 mg/m	Skin, eye and respiratory irritant. GI tract salts inflammation.
Water	7732-18-5	Less than 5%	None	None noted.

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**SECTION III - HEALTH INFORMATION**

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Inhalation : Breathing excessive levels of the vapor or mist can irritate the respiratory tract. Excessive vapor concentrations of the major component (ethylene glycol), as might be generated during heating of this material, have occasionally been reported to cause adverse effects on the blood-forming system and the nervous system.

Ingestion : The acute oral toxicities of the components of this mixture are as follows :

Ethylene Glycol : The lowest dose reported to produce death in humans was estimated to be 710 mg/kg body weight; for a person weighing 150 pounds, this would be equivalent to drinking about one and one-half (1.5) fluid ounces of pure ethylene glycol in a short period of time.

Acute oral LD50's = 4,700 mg/kg (rats)  
7,500 mg/kg (mice)  
2,000 mg/kg (cats)

Hydrated Inorganic Acid, Sodium Salt : The lowest dose of a similar compound reported to produce death in humans was estimated to be 709 mg/kg body weight; for a person weighing 150 pounds, this would be equivalent to swallowing about one-tenth (.1) of a pound of the dry material in a short period of time.

Acute oral LD50's  
For a similar compound = 2,660 mg/kg (rats)  
2,000 mg/kg (mice)

Diethylene glycol :

Acute oral LD50's = 1,000 mg/kg (humans)  
14,800 mg/kg (rats)  
9,000 mg/kg (dogs)

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**SECTION III - HEALTH INFORMATION (Continued)**

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Eye Contact : Based on the pH and irritation potential of this mixture's constituents, the mist or liquid can be expected to cause mild to moderate irritation or inflammation of the eyes.

Skin Contact : The acute dermal LD50 of the major component (ethylene glycol) of this product is 11.89 mg/kg(rabbits). Based on the pH and the irritation potential of this mixture's constituents, the mist or liquid can be expected to cause mild to moderate irritation of the skin.

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**SECTION IV - OCCUPATIONAL EXPOSURE LIMITS**

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PEL (OSHA Permissible Exposure Limit) : None established for mixture, See Section II.

TLV (ACGIH Threshold Limit Value) : None established for mixture, See Section II.

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**SECTION V - EMERGENCY FIRST AID PROCEDURE**

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For Overdose Exposure By :

Swallowing : If victim is conscious and able to swallow, quickly have victim drink water or milk to dilute. Do NOT give sodium bicarbonate, fruit juices or vinegar. NEVER give anything by mouth if victim is unconscious or having convulsions. Induce vomiting only if advised by physician or Poison Control Center. CALL PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY.

Skin Contact : Immediately flush skin with plenty of water while removing contaminated clothing.

Eye Contact : Immediately flush eyes with plenty of cool water for at least 15 minutes. Do NOT permit victim to rub eyes. GET MEDICAL ATTENTION IMMEDIATELY.

Inhalation : Immediately remove victim to fresh air. If victim has stopped breathing give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

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**SECTION VI - PHYSICAL DATA**

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Boiling Point : More than 300 F  
Melting Point : (Freezing Point) less than 5 F  
Vapor Pressure : Estimated 0.05 mmHg at 20 C  
Specific Gravity (60/60 F) : 1.14  
Vapor Density (AIR = 1) : Not determined  
pH : 7.8  
Solubility in Water : Infinite miscibility  
Appearance and Color : Clear, slightly viscous, dark green dyed liquid

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**SECTION VII - FIRE AND EXPLOSION HAZARDS**

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Flash Point : 248 F

Auto-Ignition Temperature : Not determined (752 F for ethylene glycol)

Flammable Limits in Air, %by Vol. Lower : Not determined (3.2% for ethylene glycol)  
Upper : Not determined (15.3% for ethylene glycol)

NFPA Rating : Health ( ) Fire ( ) Reactivity ( ) No NFPA Rating (X)

Fire Fighting Procedures : (Note: Individuals should perform only those firefighting procedures for which they have been trained.)

Use water spray, dry chemical, foam or carbon dioxide. Use water to keep fire-exposed containers cool. If a spill or leak has not ignited, use water spray to disperse the vapors. Water spray may be used to flush spills away from fire and diluted spills to noncombustible proportions (see warning on water spray on hot glycol below).

Unusual Fire & Explosion Hazards : Fire fighters should wear self-contained breathing apparatus in the positive pressure mode with a full face piece when, there is a possibility of exposure to smoke, fumes or hazardous decomposition products. Water spray may cause foaming of hot glycol so indirect application of water spray or use of other extinguishing media should be used on hot glycol.

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**SECTION VIII - REACTIVITY**

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Stability : Generally stable

Hazardous Polymerization : Not likely to occur

Conditions and Materials to Avoid: Avoid concentrated strong acids, oxidizing agents and bases.  
Do not expose to open flame.

Hazardous Decomposition Products : If pyrolyzed, thermal decomposition products of residue may include C, CO, CO<sub>2</sub>, H<sub>2</sub>O, NH<sub>3</sub>, organic vapors and nitrogen-containing.

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**SECTION IX - EMPLOYEE PROTECTION**

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Control Measures : Handle in the presence of adequate ventilation. Engineering controls should be used whenever feasible to maintain concentrations below acceptable exposure criteria (see Section II and IV), including enclosures and local exhaust ventilation.

Respiratory Protection : Where exposure is likely to exceed acceptable criteria (see Section II and IV) and engineering controls are not feasible, use NOSH/MISHA approved respiratory protection equipment. Respirators should be selected based on the form and concentration of contaminants in air and in accordance with OSHA (29 CFR 1910.134).

Protective Clothing : Wear gloves and protective clothing which are impervious to the product for the duration of exposure if there is potential for skin contact.

Eye Protection : Wear safety glasses meeting the specifications of ANSI standard Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the specification of ANSI Standard Z87.1 should be worn whenever there is the possibility of splashing or other contact with the eyes.

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**SECTION X - ENVIRONMENTAL PROTECTION**

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Environmental Precautions : Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill release response plan should be developed and implemented.

Spill or Leak Procedures: Wear appropriate respiratory equipment and protective equipment as described in Section IX. Contain spilled material. Transfer to secure containers. Where necessary, collect using absorbent media. In the event of an uncontrolled release is reportable under the applicable laws and regulations.

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**SECTION X - ENVIRONMENTAL PROTECTION (Continued)**

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Waste Disposal : All recovered material should be packaged, labeled, transported, and disposed of or reclaimed in conformance with good engineering practices. Avoid land filling of liquids. Reclaim where possible.

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**SECTION XI - REGULATORY CONTROLS**

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Department of Transportation :

DOT Classification : Class 9 miscellaneous

DOT Proper Shipping Name : Other regulated substances, liquid, n.o.s. (ethylene glycol), Class 9, NA 3082, PG III, RQ (ethylene glycol)

Other Regulatory Requirements :

Toxic Substance Control Act : This product is a mixture; therefore, it is not listed in the TSCA Inventory of Chemical Substances. All of the components of the mixture are listed in the TSCA Inventory of Chemical Substances.

SARA Hazard Categories (as defined in Section 3111/312) :

Immediate/Acute Health Hazard: Delayed/Chronic Health Hazard

The product contains greater than 85 % ethylene glycol (CAS #107-21-1) which is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

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**SECTION XII - PRECAUTIONS: HANDLING, STORAGE AND USAGE**

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- To prevent possible storage container rupture, do not permit to freeze; See section VI.
- Do not expose children and pets to this material.
- Keep container closed.
- Keep away from open flames
- After handling product, wash thoroughly with soap and water before drinking, eating, or smoking.
- Container hazardous when emptied. Since emptied containers retain product residues, all hazardous precautions described on this MSDS must be observed.

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**SECTION XIII - CONTACT INFORMATION**

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The information presented herein is believed to be factual as it has been derived from the works and opinions of people believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which CCI Manufacturing IL Corporation bears legal responsibility. The user should review any recommendation in the specific context of intended use to determine whether they are appropriate.

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