

# MATERIAL SAFETY DATA SHEET

## **COOLING LIQUID as used in Liquid Cooling System (LCS) (September 6, 2005)**

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Cooling Fluid F5  
Quantity: Not to exceed 350 mL  
Part No. SY35-00691

Company Identification: Cooligy, Inc.  
800 Maude Ave.  
Mountain View, CA 94043

Emergency information: Chemtrec, 1-800-424-9300  
Product information: 1-650-417-0300

### 2. COMPOSITION IDENTIFICATION AND INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS Number</u>	<u>%</u>	<u>OSHA Hazard</u>	<u>Exposure Limits</u>
DI Water		>85		
Corrosion inhibitor package				
Dye				

This product does not contain any other significantly hazardous components\*

Product composition is proprietary

\*As defined by SARA, Title 3 and California Proposition 65. \*\*Not Established

### 3. HAZARDS IDENTIFICATION

#### **Emergency Overview**

**Physical Characteristics:** Clear, red liquid; mild odor  
**Warning Statements:** May cause eye and skin irritation, nausea, diarrhea, vomiting, headache, dizziness.

#### **Potential Health Effects**

**EYES:** Contact with liquid may cause mild to moderate irritation.

**SKIN:** Contact may cause irritation and drying of the skin.

**INHALATION:** Vapor can be irritating to the upper respiratory tract.

### **3. HAZARDS IDENTIFICATION (Continued)**

**INGESTION:**

Moderately toxic. May cause stomachache, nausea, vomiting, diarrhea headache, dizziness, giddiness and similar symptoms.

**SIGNS and SYMPTOMS:**

Skin/eye irritation, stomach ache, nausea, diarrhea, vomiting, headache, dizziness, giddiness and similar symptoms.

### **4. FIRST AID MEASURES**

**EYES:**

Eye contact is not an anticipated route of exposure under normal conditions. If contacted, immediately rinse with large quantities of water for 20 minutes. Get medical attention.

**SKIN:**

Skin contact is not an anticipated route of exposure under normal conditions. If contacted, wash with soap and water. Remove contaminated clothing. If irritation persists seek medical attention.

**INHALATION:**

Inhalation is not an anticipated route of exposure under normal conditions. If inhaled, remove to fresh air. If breathing is difficult get medical attention.

**INGESTION:**

Ingestion is not an anticipated route of exposure under normal conditions. If ingested, give several glasses of water if conscious. Get medical attention.

### **5. FIRE FIGHTING MEASURES**

**FLASH POINT (METHOD):** None. Self extinguishing.

**FLAMMABILITY CLASS:** n/a

**FLAMMABILITY LIMITS IN AIR, % BY VOLUME:** none determined, aqueous system

**FIRE AND EXPLOSION HAZARD:** None.

**EXTINGUISHING MEDIA:** Foam, CO<sub>2</sub>, or water spray.

**FIRE FIGHTING INSTRUCTIONS:** Use self contained breathing apparatus and protective clothing.

## **6. ACCIDENTAL RELEASE MEASURES**

### **STEPS TO TAKE IF MATERIAL IS SPILLED OR RELEASED:**

Stop spill at source. Collect spills in appropriate containers for disposal. Wash area with plenty of water.

### **SPILL PRECAUTIONS:**

Caution: spill area (floors, etc...) may become slippery. –Wear appropriate protective equipment.

## **7. HANDLING AND STORAGE**

### **STORAGE AND TRANSPORTATION CONDITIONS:**

Prevent product from freezing by avoiding temperatures below 0°C.

**HANDLING:** No special requirements when used as intended

**STORAGE:** Store in cool area.

## **8. PERSONAL PROTECTION AND EXPOSURE CONTROLS**

**RESPIRATORY PROTECTION:** Not necessary when used as intended.

**VENTILATION:** General ventilation sufficient.

**PROTECTIVE GLOVES:** Not required when used as intended. Wear nitrile, polyethylene or Butyl protective gloves to prevent skin exposure when handling damaged units.

**EYE PROTECTION:** Not required when used as intended. Wear chemical safety goggles to prevent eye exposure when handling damaged units.

**OTHER PROTECTIVE EQUIPMENT:** As necessary to avoid eye and skin contact.

**EXPOSURE GUIDELINES:** None established

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE AND ODOR:** Clear, red liquid; mild odor

**BOILING POINT:** >100 C

**MELTING POINT:** <0 C

**SPECIFIC GRAVITY (H<sub>2</sub>O=1):** 1  
**% VOLATILES BY VOLUME:** 95-99%

**WATER SOLUBILITY (% vol):** Soluble.  
**pH (neat, unless specified):** 7.00 – 7.50

**VAPOR DENSITY:** Unknown  
**VAPOR PRESSURE @ 20°C:** Unknown

**EVAPORATION RATE (BUTYL ACETATE =1):** <<1

## **10. STABILITY AND REACTIVITY**

**STABILITY:** Product is stable.

**CONDITIONS TO AVOID:** High temperatures and evaporation of water.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxides of carbon and nitrogen.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## **11. TOXICOLOGICAL INFORMATION**

**EYES:** This product has not been tested. Expected to be low due to low toxicity of individual constituents.

**SKIN:** This product has not been tested. Expected to be low due to low toxicity of individual constituents.

**INHALATION:** This product has not been tested. Expected to be low due to low toxicity of individual constituents.

**INGESTION:** This product has not been tested. Expected to be low due to low toxicity of individual constituents.

**CHRONIC TOXICITY:** None known.

**CARCINOGENICITY:** None known.

## **12. ECOLOGICAL INFORMATION**

**ECOTOXICITY:** None expected for this quantity.

**ENVIRONMENTAL FATE:**

From BOD and COD data, this product is expected to be completely biodegradable.

**13. DISPOSAL INFORMATION**

**WASTE DISPOSAL METHODS:**

Waste disposal procedures must be in accordance with government and local regulations.

It is reasonable to expect that uncontaminated product can be disposed of through a sanitary sewer or similar bio-remediation system.

**WASTE CLASSIFICATION:** If discarded in its purchased form, this product is not a RCRA hazardous waste.

**14. TRANSPORTATION INFORMATION**

**DOT & IATA INFORMATION**

**SHIPPING NAME:** n/a

**HAZARD CLASS:** n/a

**UN/NA NUMBER:** n/a

**PACKAGING GROUP:** n/a

**LABELS REQUIRED:** n/a

**15. REGULATORY INFORMATION**

**UNITED STATES FEDERAL REGULATIONS:**

**CERCLA SECTION 103:** This product contains the following chemicals that require notification of the National Response Center of release of quantities greater than the reportable quantity: None.

**SARA SECTION 302:** This product contains the following chemicals requiring emergency planning: None.

**SARA SECTION 311/312 HAZARD CATEGORIES:**

Immediate health hazard

**SARA SECTION 313:** This product contains the following chemicals subject to the reporting requirements of the Emergency Planning and Community Right to Know Act: None.

**STATE RIGHT-TO-KNOW REGULATIONS:**

California Proposition 65: This product does not contain any chemicals known to the state of California to cause cancer or birth defects.

**INTERNATIONAL REGULATIONS:**

None known.

**CHEMICAL INVENTORIES:** This product's ingredients are on the following chemical inventories: TSCA

**16. OTHER INFORMATION**

**HAZARDOUS MATERIALS INFORMATION SYSTEM (HMIS)**

<b>HEALTH</b>	1
<b>FLAMMABILITY</b>	O
<b>REACTIVITY</b>	O
<b>PERSONAL PROTECTION</b>	B

**SUMMARY OF RATINGS SCALE**

- O No significant risk to health
- 1 Slight hazard
- 2 Moderate hazard
- 3 Serious hazard
- 4 Sever hazard

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**DEFINITIONS**

**SUMMARY OF HMIS RATINGS**

**HEALTH HAZARD RATINGS**

- O No significant risk to health.
- 1 Irritation or minor reversible injury possible.
- 2 Temporary or minor injury may occur.
- 3 Major injury likely unless prompt action is taken and medical treatment is given.
- 4 Life-threatening, major or permanent damage may result from single or repeated exposures.

**FLAMMABILITY HAZARD RATINGS**

- O Materials that are normally stable and will not burn unless heated.

- 1 Materials that must be preheated before ignition will occur. Flammable liquids in this category will have flash points at or above 200°F (NFPA Class IIIB).
- 2 Materials that must be moderately heated before ignition will occur, including flammable liquids with flash points at or above 100°F and below 200°F (NFPA Class II & IIIA).
- 3 Materials capable of ignition under almost all normal temperature conditions, including flammable liquids with flash points below 73°F and boiling points above 100°F as well as liquids with flash between 73°F and 100°F (NFPA Class IB & IC).
- 4 Very flammable gasses or very volatile, flammable liquids with flash points below 73°F and boiling points below 100°F (NFPA Class IA).

## **REACTIVITY HAZARD RATING**

- O Materials that are normally stable, even under fire conditions and will not react with water.
- 1 Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but they will not release energy violently.
  - 2 Materials that are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water.
  - 3 Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation, or materials that react explosively with water.
  - 4 Material that are readily capable of detonation or explosive decomposition at normal temperatures and pressures.

## **PERSONAL PROTECTION INDEX DEFINITIONS**

- A Safety glasses
- B Safety glasses, gloves
- C Safety glasses, gloves synthetic apron
- D Face shield, gloves, synthetic apron.
- E Safety glasses, gloves, dust respirator.
- F Safety glasses, gloves, synthetic apron, dust respirator.
- G Safety glasses, gloves, vapor respirator.
- H Splash goggles, gloves synthetic apron, vapor respirator.
- I Safety glasses, gloves, combination dust and vapor respirator.
- J Splash goggles, gloves, synthetic apron, combination dust & vapor respirator.
- K Airline hood or mask, gloves, full protective suit, boots.
- X Ask your supervisor for specialized handling directions.