MATERIAL SAFETY DATA SHEET

COLD FIRE® is a fire suppressing agent specially formulated to rapidly snuff out Class A,B,D and K fires. Prevents reflash, safe to store, handle and use, leaves virtually no residue, and is environmentally friendly. The chemical is water soluble and rapidly biodegradable. On Class B oil fires, the chemical encapsulates the oil and prevents burning and reignition. Has the advantages of foam and dry chemical without mess, specialized apparatus or contamination to our environment. **COLD FIRE®** can be used in pumpers and all types of multi-use portable equipment.

Capabilities

Suppressing Power: Quickly snuffs out fires. "Kills" burning fuel on contact. Prevents reignition by encapsulating fuel source. Retards smoke generation.
Applications: Class A, B, D & K fires of all types.
Cleanup: None needed. Foam layer dissipates without leaving residue. Product biodegrades rapidly. Oil molecules do not form a tight emulsion with the suppressing solution.
Dispersant Capability: Low. Treated oils are not dispersed in water.

Characteristics

pH: pH of concentrate is 6.15. Neutral when diluted.
Flash Point: Negligible.
Boiling Point: 212° F.
Odor: Mild fresh scent. Does not contain d-limonenes. Clear color.
Water Solubility: Complete.
Shelf Life: Indefinite when stored in closed containers between 32°F and 120°F. Concentrate mixed with clean water chlorinated to kill any organism will have 5 year life time in a fire extinguisher. 3% mix classify extinguishing medium to Class A&B Rating 21A for Class A and Rating 183B for Class B.
Dilution Strength: Use at strengths of 1% to 10% in any type of water.
Residue: Agent layer dissipates rapidly. Product leaves no residue.

Environmental & Safety Considerations

Biodegradability: 100% in 21 days under ideal conditions.
Hazardous Components: No components are listed in the NIOSH Recommendations for Occupational Health Standards, 1988, or are defined as hazardous by SARA, CERLA, or RCRA. No OSHA PEL's are established for other ingredients.
Handling: Suppressor is neutral. It will remove oil from the skin and may irritate the eyes if sprayed directly into them. When handling bulk concentrate, eye protection, gloves, and impervious clothing should be worn when there is danger of splashing, prolonged exposure to vapor, or prolonged skin contact, as with all chemicals.
Disposal: Suppressant itself may be disposed through municipal systems.

IDENTIFICATION

Manufacturer: FIREFREEZE Worldwide, Inc.
Date Prepared: December 10, 1999
Formulation Number: JG302
Trade Name: COLD FIRE 302
Product: Class A:B:D:K Fire Suppressing Agent
Distributor: RDR Technologies
Phone: (405) 702-0055
Web: rdrtechnologies.com

INGREDIENTS AND HAZARD CLASSIFICATION

Components are classified trade secret. No components are believed to be hazardous, or listed in the NIOSH Recommendations for Occupational Safety and Health Standards, 1988, or are listed as hazardous by SARA, CERCLA, or RCRA. No OSHA PEL's are established for any of the other ingredients.

PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 212° F.
Vapor Pressure (mm Hg): Same as water.
Solubility in water: 100%
Specific Gravity: 1.02 @ 60° F.
pH: 6.15 (concentrate). Neutral when diluted
Appearance and Odor: Clear liquid, fresh smell.

FIRE AND EXPLOSION DATA

Flash Point: Not applicable.
Flammable Limits: Non-flammable.
LEL: Not applicable.
UEL: Not applicable.
Extinguishing Media: Not applicable.
Special Fire Fighting Procedures: None.
Unusual Fire and Explosion Hazards: None.

REACTIVITY DATA

Stability: Stable.
Incompatibility: None.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.
Hazardous Polymerization: Will not occur.

HEALTH HAZARD DATA

Exposure Limits
OSHA PEL: **Not established.**
ACGIII TLV: Not established.
Routes of Entry
Inhalation: Yes.
Skin:Yes.
Ingestion: Yes.
Signs and Symptoms of Exposure
Skin: Negligible hazard. Not a primary skin irritant. Dermal irritation testing for 72 hours on albino rabbits showed no erythema and no edema.
Eyes: Not considered to be a primary ocular irritant.
Inhalation: Negligible.
Ingestion: Not considered to be orally toxic.
First Aid
Eyes: Immediately flush eyes with water.
Skin: Rinse with water.
Inhalation: Negligible. Remove to fresh air.
Ingestion: Drink water.
Carcinogenicity
NTP? No.
IARC? No.
OSHA Regulated? No

PRECAUTIONS FOR SAFE HANDLING AND USE

Spill or Leak Procedures: Rinse affected area with water.
Waste Disposal Method: Dispose as non-hazardous waste in accordance with local regulations.
Storage and Handling Precautions: Store in temperatures from 32° F to 120° F in closed containers to prevent evaporation and deterioration. Freezing will not damage material as long as container remains intact.
Other Precautions: Although components have low hazard levels, the product will remove oils from the skin like common soap. Avoid prolonged skin contact.

CONTROL MEASURES

Respiratory Protection: Not required.
Ventilation: Dispose as non-hazardous waste in accordance with local regulations.
Protective Gloves: Wear if there is prolonged skin contact.
Eye Protection: Wear if needed to prevent reasonable probability of eye contact.

HAZARD CLASSIFICATION

IMO Hazard Class and Number: Non-hazardous.
UN Number: Not applicable.
US DOT Hazard Class: Not regulated by DOT.
US DOT Identification Number: Not applicable.

REGULATORY INFORMATION

EPA SNAP: Significantly New Alternative Policy Program Listed. **Cold Fire®** is listed by the EPA as a substitute for Halon 1211.

HMIS Rating
Health: 0
Flammability: 0
Reactivity: 0

ENVIRONMENTAL DATA

Biodegradability: Product is 100% biodegradable in an active environment within 21 days.
Toxicity: In accordance with U.S. EPA Office of Pollution Prevention and Toxic criteria for ranking the acute toxicity of chemicals in the aquatic environment, ColdFire 302 is considered to be of low concern.
-96 hour acute toxicity versus freshwater alga (Selenastrum capricornutum) IAW 40 CFR 797.1050 showed ColdFire 302 was algicidal at concentrations above 750 ppm.
-96 hour acute toxicity versus juvenile rainbow trout (Oncorhynchus mykiss) IAW 49 CFR 797.1400 showed an LC50 of 105 ppm.