

MATERIAL SAFETY DATA SHEET

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ES200 COLD FIRE® Firefighting Wetting Agent

ES200 Cold Fire® firefighting is an environmentally friendly fire suppressing wetting agent. Specially designed to extinguish Class A, B and D fires. ES200 Cold Fire® firefighting provides rapid cooling. Quick extinguishment. Prevents reignition through the encapsulation of hydrocarbons. The product is safe to store, handle and use, leaves virtually no residue, non-slip and is environmentally friendly, non-toxic, non-corrosive, and 100% biodegradable. It contains 100% natural ingredients.

CAPABILITIES

FIRE SUPPRESSING POWER:	ES200 Cold Fire® firefighting quickly snuffs out fires. “Cools” burning fuel on contact. Prevents re-ignition by encapsulating fuel source. Retards smoke generation. Cools rapidly.
APPLICATIONS:	Class A, B and D fires of all types.
CLEAN-UP:	None needed. Natural foam layer dissipates without leaving a 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.
FLASHPOINT:	Negligible.
BOILING POINT:	Greater than 212°F.
ODOUR:	Mild fresh scent. Does not contain d-limonene. Clear colour.
WATER SOLUBILITY:	Complete.
SHELF LIFE:	Indefinite when stored in closed containers between 32°F and 120°F. Suitable for batched mixing. Does not require any special storage, or rotation of container due to settling.
DILUTION STRENGTH:	Use at strengths of 0.15% to 10% in any type of water (including seawater).
RESIDUE:	Agent layer dissipates rapidly. The product leaves no residue. Will not impeded fire investigation or hydrocarbon detection dogs with assisting with establishing the cause of the fire.

ENVIRONMENTAL AND 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:	The 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 vapour, or prolonged skin contact, as with all chemicals.
DISPOSAL:	Suppressant itself may be disposed of through municipal systems.

SECTION I - IDENTIFICATION

MANUFACTURER:	FIREFREEZE Worldwide Inc. Incorporated
ADDRESS:	272 Route 46, Rockaway, N.J. 07866
PHONE:	(973) 627-0722. Fax: (973) 627-2982
DATE PREPARED:	January 4 th 2011 Formulation #: JG 302
TRADE NAME:	Cold Fire® firefighting (ES200).
PRODUCT:	Class A. Class B. Class D. Fire Suppressing Wetting Agent

SECTION II - INGREDIENTS AND HAZARD CLASSIFICATION

Components are a 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.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT:	212°F	VAPOUR 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 ODOUR:	Clear liquid, fresh smell.

SECTION IV - FIRE AND EXPLOSION DATA

FLASHPOINT:	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.		

SECTION V - REACTIVITY DATA

STABILITY:	Stable.	INCOMPATIBILITY:	None.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon Monoxide and Carbon Dioxide.	HAZARDOUS POLYMERIZATION:	Will not occur.



SECTION VI - HEALTH HAZARD DATA

EXPOSURE LIMITS:

OSHA PEL:	Not established.	ACGIH TLV:	Not established
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ROUTE OF ENTRY:

INHALATION:	Yes	SKIN:	Yes.	INGESTION:	Yes
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SIGNS AND SYMPTOMS OF EXPOSURE:

EYES:	Not considered to be a primary ocular irritant.
SKIN:	Negligible hazard. Not a primary skin irritant. The liquid is neutral with pH 7.5. Dermal irritation testing for 72 hours on albino rabbits showed no erythema and no edema (oedema).
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.
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SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

SPILL OR LEAK PROCEDURES:	Rinse affected area with water.
WASTE DISPOSAL METHOD:	Dispose of as non-hazardous waste in accordance with local regulations.
STORAGE AND HANDLING PRECAUTIONS:	Store between 32°F and 120°F in a closed container to prevent evaporation. 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 the common soap. Avoid prolonged skin contact.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION:	Not required.
VENTILATION:	Under ordinary conditions of use for its intended purpose, no special ventilation is required.
PROTECTIVE GLOVES:	Wear if there is prolonged skin contact.
EYE PROTECTION:	Wear if needed to prevent the reasonable probability of eye contact.



SECTION IX - 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.

SECTION X - REGULATORY INFORMATION

EPA SNAP:	Significantly New Alternative Policy Program Listed (SNAP). Cold Fire™ is listed by the EPA as a substitute for Halon 1211.		
HMIS RATING:	HEALTH: 0	FLAMMABILITY: 0	REACTIVITY: 0

SECTION XI - ENVIRONMENTAL DATA

BIODEGRADABILITY:	Product is 100% biodegradable in an active environment within 7-21 days.		
TOXICITY:	In accordance with U.S. EPA Office of Pollution Prevention and Toxics criteria for ranking the acute toxicity of chemicals in the aquatic environment, Cold Fire® firefighting ES200 (Cold Fire 302) is considered to be of low concern.		

- 96-hour acute toxicity versus freshwater alga (*Selena strum capricornutum*) IAW 40 CFR 797.1050 showed Cold Fire 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.

DISCLAIMER:

The information presented in this MSDS is believed to be factual. However, nothing contained in this information is to be taken as a warranty of any kind by **HYDRO NAVITAS SOLUTIONS LTD** or **FIREFREEZE WORLDWIDE INC.** The user should review any recommendations, in the specific context of the intended use, to determine whether they are appropriate.

DEFINITIONS:

NIOSH	National Institute for Occupational Safety and Health
SARA	Superfund Amendments and Reauthorization Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
RCA	Resource Conservation and Recovery Act
OSHA PEL	Occupational Safety and Health Administration, Permissible Exposure Limits
LEL	Lower Explosive Limit
UEL	Upper Explosive Limit
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
ACG TLV	Annual Guideline Concentrations, Threshold Limit Value
EPA SNAP	Environment Protection Agency, Significant New Alternatives Policy
IMO	International Maritime Organisation
US DOT	United States, Department of Transportation
HMIS	Hazardous Materials Identification System
IAW CFR	In Accord with, Code of Federal Regulations

