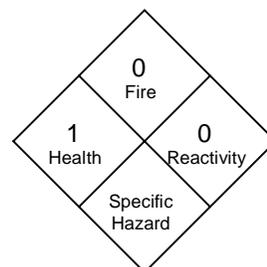


MATERIAL SAFETY DATA SHEET

FIRE-TROL HOLDINGS, L.L.C.

FIRE-TROL® LCA-R, LIQUID CONCENTRATE

Fire-Trol Holdings, L.L.C.
2620 N. 37th Dr.
Phoenix, AZ 85009
(602) 262-5401
(530) 865-4932 (24 hr. number)



THIS PRODUCT IS BASED ON COMMERCIAL FERTILIZERS AND GENERALLY HAS A LOW ORDER OF TOXICITY, AS INDICATED BY PRODUCT'S TOXICOLOGICAL ANALYSIS.

FIRE-TROL® FIRE RETARDANTS HAVE NO CAS NUMBERS.

CAUTION

Will cause eye irritation. Prolonged contact may be mildly irritating to skin.

A. MATERIAL IDENTIFICATION AND INFORMATION

1.

GENERAL INFORMATION:

FIRE-TROL® LCA-R Liquid Concentrate is designed to be diluted with water and used as an aerial fire retardant for wildfires. The major ingredient is ammonium polyphosphate, a commonly used agricultural fertilizer. It also contains minor amounts of a clay thickener, a corrosion inhibitor, and colorant.

DOT Proper Shipping Name:

This product is not classified as a hazardous material by the U.S. Department of Transportation.

DOT Hazard Classification/I.D.:

Not Applicable

Label(s): Product Label

U. S. Surface Freight Classification:

Fire Extinguisher Compounds,
N.O.I.B.N.

SARA Hazard Notification, Hazardous Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Immediate Delayed

2.

SECTION 313 TOXIC CHEMICAL(S)

None.

3.

CALIFORNIA PROPOSITION 65

California: Warning: "This product may contain chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm."

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4. HAZARDOUS CHEMICAL(S) UNDER OSHA HAZARD COMMUNICATION STANDARD:

Clay: "It is to be noted that IARC in Volume 42 (1987) of its Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans reports that there is limited evidence for the carcinogenicity of attapulgite to experimental animals and there is inadequate evidence for the carcinogenicity of attapulgite to humans (IARC Class 3). Fuller's Earth including attapulgite and montmorillonite, like many naturally-occurring minerals, may contain some free silica and crystalline silica, by itself, has been classified by IARC as a Class 2A carcinogen. IARC in Volume 42 (1987) reports there is sufficient evidence of the carcinogenicity of crystalline silica to experimental animals, and that there is limited evidence of the carcinogenicity of crystalline silica to humans."

HEALTH HAZARD CLASSIFICATION:

An immediate health hazard.

A delayed health hazard.

WARNING STATEMENTS:

WARNING!

Contains material which can cause allergic respiratory reaction. May cause respiratory tract irritation. May cause eyes and skin irritation.

PRECAUTIONARY MEASURES:

Use with adequate ventilation.

Avoid unnecessary contact with eyes and skin.

B. OCCUPATIONAL CONTROL PROCEDURES

1. FOR HANDLING CONCENTRATE PRODUCT:

- a. Eye Protection: Wear safety goggles.
- b. Respirator Protection: Not required.
- c. Skin Protection: Rubber coated gloves and clothing which minimizes skin exposure are recommended.
- d. Ventilation: Work in a well ventilated area.
- e. Ingestion: Avoid ingestion.

2. FOR HANDLING DILUTED PRODUCT:

- a. Eye and Skin: Avoid unnecessary contact with eyes and skin.
- b. Ingestion: Avoid ingestion.

3. DO NOT DROP ONTO FIRE FIGHTERS.

C. FIRE PROTECTION INFORMATION

1. Product is non-flammable, has no flash point and no upper and lower explosive limits.
2. Special fire fighting procedures: Use water to keep fire exposed containers cool. Wear full protective clothing and self-contained breathing apparatus approved by NIOSH.
3. Unusual fire and explosion hazard: N/A

D. PHYSIOLOGICAL EFFECTS & HEALTH INFORMATION (TOXICOLOGICAL DATA)

1. FOR CONCENTRATE BEFORE DILUTION WITH WATER:

- a. Eye Irritation: Can cause eye irritation and conjunctivitis.
- b. Skin Irritation: Prolonged contact may be mildly irritating to skin.
- c. Ingestion: May cause irritation of throat tissues.

Animal Test Results on Concentrate Products

Rabbit Eye Irritation:	Mildly irritating.
Rabbit Skin Irritation:	Slight irritant.
Rat Acute Oral:	LD ₅₀ >505 mg/kg < 5050 mg/kg (low toxicity)
Rabbit Acute Dermal:	LD ₅₀ >2020 mg/kg (low toxicity)

2. FOR MIXED READY-TO-USE LIQUID:

- a. Eye Irritation: Can cause eye irritation.
- b. Skin irritation: Prolonged contact may be mildly irritating to skin.
- c. Ingestion: Can cause throat irritation.

Animal Test Results on Diluted Products (Acute Exposure)

Rabbit Eye Irritation:	Minimally irritating.
Rabbit Skin Irritating:	Slight irritant.
Rat Acute Oral:	LD ₅₀ >5050 mg/kg (low toxicity)
Rabbit Acute Dermal:	LD ₅₀ >2020 mg/kg (low toxicity)

Note: All animal results reported in this section for both concentrated and diluted products were run in accordance with the USDA Forest Service Specifications for Long-term Retardants; 5100-304a, February, 1986, through the U.S. Forest Service, by an independent laboratory. The results are all acceptable according to those requirements.

E. PHYSICAL & CHEMICAL PROPERTIES

1. Specific Gravity: 12.0 to 12.3 lb./gallon for the concentrate.
2. Viscosities: 1500 cps to 8000 cps.
3. Appearance: Thick red liquid.
4. Solubility: Mixes readily in water. Contains some insoluble material (clay, colored pigment).
5. Vapor Pressure: Less than 1 mm mercury at 100°F.
6. Boiling Point: 223 °F.

F. REACTIVITY DATA

1. CONCENTRATE:

- a. Concentrate is stable and hazardous polymerization will not occur.
- b. Hazardous decomposition products: Ammonia and sodium cyanide. The latter is formed if the material is heated to over 815°F. Please note that these decompositions are not a cause for concern when the diluted product is used in fire fighting, due to air dilution and other factors.
- c. Avoid contact with strong acids to avoid formation of hydrogen cyanide.
- d. Avoid contact with zinc coated metals and magnesium due to excessive corrosion rates.
- e. Acceptable containers and metals: 2024 T3 aluminum, 4130 mild steel and yellow brass have acceptably low corrosion rates.

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2. LIQUID AFTER DILUTION:

- a. Avoid contact with zinc-coated metals and magnesium due to excessive corrosion rates.
- b. Acceptable containers and metals with respect to corrosion: 2024 T3 aluminum, 4130 mild steel and yellow brass.

G. ENVIRONMENTAL PROTECTION

1. ENVIRONMENTAL IMPACT:

Aquatic toxicity of FIRE-TROL® Liquid Concentrate Retardant - Rainbow Trout - LC₅₀ value at 96 hours: 790 mg/liter.

Avoid lakes and streams in applying FIRE-TROL® LCA-R Liquid Concentrate Retardant, due to the sensitivity of aquatic life to chemicals. Fire retardant chemicals applied near streams have been shown to have virtually no impact on them. This is partly because there is a minimum of migration of chemicals from areas as close as three meters from the edge of a stream (Norris et al, "The Behavior & Impact of Chemical Fire Retardants in Forest Streams," Forestry Sciences Laboratory, USDA Forest Service Pacific Northwest Forest and Range Experiment Station, October 20, 1978).

Use and disposal employing proper environmental control practices should not cause significant environmental impact.

2. PRECAUTIONS IF MATERIAL IS ACCIDENTALLY RELEASED OR SPILLED:

Caution should be exercised in the area of spilled material since FIRE-TROL® LCA-R can cause a slippery condition.

3. WASTE DISPOSAL METHODS:

Contain spills and maximize recovery. Disposal of spilled material should be in accordance with applicable federal, state and local environmental regulatory requirements.

H. EMERGENCY & FIRST AID PROCEDURES

1. Eye Contact: Flush eyes with water immediately, if exposed.
2. Skin Contact: Wash skin thoroughly and change clothing.
3. Inhalation: Upon inhaling, move to fresh air.
4. Ingestion: Upon ingestion, have person who is conscious drink water and induce vomiting.
5. General: Seek medical attention as soon as possible if adverse effects occur.

NOTICE OF WARRANTY:

FIRE-TROL HOLDINGS, L.L.C. warrants that FIRE-TROL® products are reasonably fit for the purpose for which they were developed only when used in accordance with recommended use practices under normal conditions. In no case shall FIRE-TROL HOLDINGS, L.L.C. be liable for consequential, special, or indirect damages resulting from the use or handling of these products. ALL such risks shall be assumed by the buyer. FIRE-TROL HOLDINGS, L.L.C. MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESSED OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

Revised Date: December 28, 1999