

SECTION 1: PRODUCT IDENTIFICATION AND USE

Product Identifier: **FIRE-TROL^(R) 931-R**

Product use: FIRE-TROL^(R) 931-R is a liquid concentrate fire retardant designed to be diluted with water and used for aerial application to control wildfire.

Manufacturers name: **FIRE-TROL CANADA COMPANY
455 DENE DRIVE
KAMLOOPS BC
V2H 1J1**

Emergency Telephone Numbers: (24 Hours)

[250] 374-0379 : FIRE-TROL CANADA COMPANY: KAMLOOPS

[602] 262-5401 : FIRE-TROL HOLDINGS L.L.C.: PHOENIX

GENERAL INFORMATION

WHMIS CLASSIFICATION: D2b

WARNING STATEMENT

Avoid eye contact, will cause eye irritation. Prolonged contact may be mildly irritating to the skin. Do not ingest.

SECTION 2: HAZARDOUS INGREDIENTS

FIRE-TROL^(R) 931-R is a liquid concentrate mixture of Ammonium Polyphosphate (80% to 95%), Sodium Hexacyanoferrate (0.1% to 3%) CAS #13601-19-9, Ferric Oxide (0.1% to 3.0%) CAS #1309-37-1, and a minor amount of a clay thickener. Actual amounts of each ingredient may vary from time to time.

SECTION 3: PHYSICAL DATA:

1. Physical State: High viscosity liquid.
2. Odour and Appearance: Bland. Dark red liquid.
3. Odour Threshold (ppm): No data available.
4. Vapor Pressure (mm Hg): <1 at 100 degrees C.
5. Vapor Density (Air = 1): No data available.
6. Evaporation Rate: Not applicable.
7. Boiling Point: 106 degrees C
8. Freezing point: Not applicable.
9. pH: No data available.
10. Specific Gravity: 1.40 to 1.43
11. Coeff. Water/Oil Dist.: No data available.

SECTION 4: FIRE AND EXPLOSION DATA:

1. Flammability: Not flammable
2. Extinguishing Media: Carbon dioxide, dry chemical, foam, or water spray. Class A, BC, or ABC fire extinguishers. Sand/earth.
3. Special Firefighting Procedures in Enclosed Areas:

In case of accident or fire involving FIRE-TROL 931-R use water to keep fire exposed containers cool. Wear an approved self contained breathing apparatus and protective clothing.

There are no special hazards involved in fighting fires involving the diluted product.

4. Flashpoint: FIRE-TROL 931-R has no flash point.
5. Upper and Lower Flammable Limits (%): None
6. Autoignition Temp.: Not applicable.
7. Hazardous Combustion Products: When FIRE-TROL 931-R is heated to point of combustion, hydrogen cyanide may be formed.
8. Explosion Data:

Sensitivity to Impact: Not Applicable

Sensitivity to Static Discharge: Not Applicable

SECTION 5: REACTIVITY DATA:

1. Stability: Excellent long term stability. Hazardous polymerization will not occur.
2. Incompatibility: Avoid strong acids to prevent formation of hydrogen cyanide.
3. Reactivity: Not Applicable.
4. Hazardous Decomposition Products: Ammonia and Hydrogen Cyanide.

The latter is formed if the material is heated to over 435 degrees C.

5. Storage: Store concentrate in plastic, aluminum, or steel tanks.

Avoid contact with zinc coated metals or magnesium due to excessive corrosion rates.

SECTION 6: TOXICOLOGICAL PROPERTIES:

1. Routes of Entry: Skin and eye contact can be expected to be the most common types of exposure to FIRE-TROL 931-R.
2. Toxicological Data:

Concentrate (Acute Exposure)

- | | | |
|------|-------------------------|----------------------------------|
| i) | Rabbit Eye Irritation: | Minimally Irritating |
| ii) | Rabbit Skin Irritation: | Practically not an Irritant |
| iii) | Rat Acute Oral: | LD50 > 5010 mg/kg (low toxicity) |
| iv) | Rabbit acute Dermal: | LD50 > 2010 mg/kg (low toxicity) |

Diluted Product (Acute Exposure)

- | | | |
|------|-------------------------|----------------------------------|
| i) | Rabbit Eye Irritation: | Minimally Irritating |
| ii) | Rabbit Skin Irritation: | Practically not an Irritant |
| iii) | Rat Acute Oral: | LD50 > 5020 mg/kg (low toxicity) |
| iv) | Rabbit Acute Dermal: | LD50 > 2010 mg/kg (low toxicity) |

All animal tests reported in this section for both concentrated and diluted products were run in accordance with U.S. Forest Service Specifications for long term retardants: 5100-304a, February 1986. The results are all acceptable according to those specifications.

3. Effects of Acute Exposure:

Skin: Mild Irritation.

Eyes: Mild to Moderate Irritation. Prolonged exposure to the dry product can cause conjunctivitis.

4. Effects of Chronic Exposure: No data available.

5. Carcinogenicity: Not listed by NTP or IARC.

6. Teratogenicity: Not listed by NTP or IARC.

7. Mutagenicity: Not listed by NTP or IARC.

8. Reproductive toxicity: Not listed by NTP or IARC.

9. Synergistic Products: Not applicable.

SECTION 7: PREVENTIVE MEASURES:

1. Protective clothing and equipment should be utilized when handling FIRE-TROL 931-R.

(i) Gloves: Avoid prolonged skin contact. Use rubber, or plastic gloves when handling concentrate.

(ii) Eye: Avoid eye contact. Use safety goggles offering a full seal around the eyes.

(iii) Clothing: Wear coveralls to minimize exposure to concentrate and dilute product.

2. Ventilation Type Required: Mechanical

3. Leak and Spill Procedure: Spills of FIRE-TROL 931-R should be contained with a physical barrier such as earth or a berm. Product should be recovered for reuse or physically removed. Sand or other absorbent material can be used to facilitate removal. Water can be used to dilute remaining material.

4. Waste Disposal: Dispose of in accordance with all Federal, Provincial and Local regulations.
5. Transportation Information:
 - Transport Canada: Not Regulated
 - Reportable Quantity: Not Applicable
 - Non-flammable, Non-corrosive

SECTION 8: ENVIRONMENTAL EFFECTS:

1. Due to the sensitivity of aquatic life to chemicals, **do not** apply FIRE-TROL 931-R to lakes, streams or watercourses.
2. 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 3 metres from the edge of a stream. (Morris et al, " The Behavior and Impact of Chemical Retardants in Forest Streams," Forestry Sciences Laboratory, USDA Forest Service, Pacific Northwest Forest and Range Experiment Station, October 20, 1978.)

Concentrate:

96 hr. LC50 Juvenile Rainbow Trout: 660 mg/litre.

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

SECTION 9: FIRST AID PROCEDURES:

1. Skin Contact: Wash off with water. Remove contaminated clothing. Use medicated lotion if skin becomes dry or chapped.
2. Eye Contact: Flush eyes immediately with large amounts of water for at least 15 minutes. Consult a physician.
3. Inhalation: Remove to fresh air and give oxygen if breathing is difficult. Get medical attention.
4. Ingestion: Give large amounts of water and induce vomiting. Get medical attention.
5. General: Independent laboratory testing has determined that when Sodium Hexacyanoferrate is burned most cyanogens become CO₂ rather than poisonous HCN gas. Exposure to a maximum level of 50 mg/m³ can be expected when retardant is applied at 2 litres/100 sq metres. No harmful human or environmental effects are expected. If adverse effects do occur, provide basic life support and seek immediate medical attention.

SECTION 10: PREPARATION DATE

Prepared By: Wally McCulloch
FIRE-TROL CANADA COMPANY

[250] 374-0379

Effective Date: March 1, 1999

Supersedes: August 18, 1997

NOTICE OF WARRANTY

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