Safety Data Sheet

Section 1: Identification

Product Name: **Fire Storm Colour Flame Solution - Blue**

Recommended use: Liquid. Produces colored flame

Professional Use only by a qualified Pyrotechnician in a Theatrical Entertainment Application or in Professional Training Applications.

Manufacturer and Distributor's Name and Address:

Ultratec Special Effects, Inc.
148 Moon drive
Owens Cross Roads, AL 35763
United States
Telephone Number: (256) 725-4224
www.ultratecfx.com

Emergency Telephone Number: 800-255-3924 - ChemTel

Section 2: Hazard Identification

Classification of substance or mixture:

Chemicals have been withheld for trade secret and proprietary information purposes.

Section 3: Composition/Information on Ingredients

WARNING

DANGER! FLAMMABLE LIQUID AND VAPOUR.
HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN.
AFFECTS CENTRAL NERVOUS SYSTEM, LIVER, KIDNEYS, AND CARDIOVASCULAR SYSTEM.
CAUSES IRRITATION TO EYES, SKIN & RESPIRATORY TRACT.
THIS PRODUCT HAS CAUSED ADVERSE REPRODUCTIVE AND FETAL EFFECTS IN ANIMALS.

MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. MAY CAUSE DIGESTIVE TRACT IRRITATION WITH NAUSEA, VOMITING AND DIARRHEA. MAY CAUSE LIVER, KIDNES AND HEART DAMAGE. POSSIBLE CANCER HAZARD. MAY CAUSE CANCER. RISK OF CANCER DEPENDS ON DURATION AND LEVEL OF EXPOSURE.

TARGET ORGANS: Kidneys, heart, central nervous system, liver and eyes.

Inhalation: Harmful if inhaled. Inhalation of vapours can cause severe irritation of mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, and laryngitis, shortness of breath, headache, nausea, vomiting, convulsions and possible death. These symptoms may be followed by central nervous system effects, liver damage, kidneys damage, adrenal gland damage, cyanosis, weak and rapid pulse and unconsciousness. Death can occur from respiratory and circulatory failure. May cause adverse central nervous system effects. May cause visual impairment and possible permanent blindness.

Ingestion: May be fatal or cause blindness if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advances stages may cause collapse, unconsciousness, coma, and possible death due to respiratory failure. May cause cardiopulmonary system effects.

Skin Contact: Causes skin irritation. And may cause rash and blister formation. Prolonged contact can cause skin burns. May be absorbed through the skin in harmful amounts. Prolonged and/or repeated contact may cause defatting of the skin, dermatitis and toxic effects.

Eye Contact: Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. May cause painful sensitization to light. Splashes cause severe irritation, possible corneal burns and eye damage.

Chronic Exposure: Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. Chronic exposure may cause reproductive disorders and teratogenic effects. Laboratory experiments have resulted in mutagenic effects. Prolonged exposure may cause liver, kidney and heart damage. Repeated or prolonged exposure may cause weight loss, low blood pressure, jaundice, reduced urinary output, eye damage and anemia. Dichloroethane is a suspected human carcinogen based on animal data.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney, cardiovascular, neurological or respiratory functions may be more susceptible to the effects of the substance.

Section 3: Composition/Information on Ingredients

Hazardous Components

Chemicals have been withheld for trade secret and proprietary information purposes.

Section 4: First-Aid Measures

Inhalation: Get medical aid immediately. Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Ingestion: If victim is conscious and alert, give large quantities of water (2-4 cupfuls of milk or water). Never give anything by mouth to an unconscious person. Get medical aid immediately.
Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
Notes to Physician: Effects may be delayed. Ethanol may inhibit methanol metabolism.

Section 5: Fire-Fighting Measures

Fire: Flash point: 11C (51.8 F) CC Autoignition temperature: 464C (867.2 F) Lower Explosion limits 6% and Upper 36%
Flammable Liquid and Vapor! A dangerous fire hazard when exposed to heat, flame, or oxidizers.
General Information: Containers can build up pressure if exposed to heat and/ or fire. Above flash point, vapour-air mixtures are explosive within flammable limits noted. Sealed containers may rupture when heated. Sensitive to static discharges. Wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approve or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Vapours can travel to a source of ignition and flash back. During a fire, irritating and highly toxic fumes may be generated by thermal decomposition or combustion. Flammable liquid can release vapours that form explosive mixtures at temperatures above the flashpoint. Combustion byproducts include phosgene and hydrogen chloride gas. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Vapours may be heavier than air. They can spread along the ground and collect in low or confined areas. May be ignited by heat, sparks, and flames.
Extinguishing Media: For small fires, use dry chemicals, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. For large fires, water spray, fog or alcohol-resistant foam. Do not use straight streams of water.
Explosion: Sealed containers may rupture when heated. Above the flash point, explosive vapor-air mixtures may be formed. Vapors can flow along surfaces to distant ignition source and flash back.
Fire Extinguishing Media: Water spray, dry chemical, alcohol foam, or carbon dioxide. Do not use a solid stream of water, since the stream scatters and spreads the fire. Water spray may be used to keep fire exposed containers cool.
Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

Section 6: Accidental Release Measures

General Information: Use proper personal protective equipment as noted. Ventilate area of leak or spill. Remove all sources of ignition. Isolate hazard area. Keep unprotected personnel from entering. Contain and recover liquid when possible. Do not flush to sewer. Report to the local Ministry of the Environment all releases to water, soil and air in excess of reportable quantities.
Spills/Leaks: Scoop up with non-sparking tool, then place into a suitable container for proper disposal. Use water spray to disperse the gas/vapour. Remove all sourced of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand or vermiculite. Do not use combustible materials such as saw dust. Provide ventilation. A vapour suppressing foam may be used to reduce vapours. Water spray may reduce vapour but may not prevent ignition in closed spaces.

Section 7: Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

Section 8: Exposure Controls/ Personal Protection

Airborne Exposure Limits:
Ethylene Dichloride
OSHA Permissible Exposure Limit (PEL) – 50 ppm (TWA), 100 ppm (ceiling), 200 ppm (max)/6 min/3 hour
ACGIH Threshold Limit Value (TLV) - 10 ppm (TWA), A4 – not classifiable as a human carcinogen.
Potential for cutaneous absorption
- NIOSH IDLH: 50 ppm
Ventilation System:
Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. If used in a laboratory environment use only under a chemical fume hood. Please refer to the most recent ACGIH document, Industrial Ventilation, A manual of recommended Practices for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a full-face piece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A respiratory protection program that meets OSHA's 29 CFR – 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.
WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Polyvinyl alcohol (PVA) and Viton are recommended materials for personal protective equipment. Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9: Physical and Chemical Properties

Appearance: Clear blue liquid.
Odor: alcohol/chloroform like odour.
Solubility: Miscible -5.7 g/100 g of water @ 20 C (68 F)
Specific Gravity: 0.822 @ 25C/25C
pH: Not available % Volatiles by volume @ 21C (70F): 100
Boiling Point: 66 C (151F)
Auto ignition Temperature: 464 deg C (867.2 deg F)
Melting Point: n/a
Vapor Density (Air=1): 1.27
Vapor Pressure (mm Hg): 126 mm Hg @ 20 C

Evaporation Rate: (Ether=1) 5.2

Section 10: Stability and Reactivity

Stability: Stable under ordinary conditions of use, storage, temperature and pressure.
Hazardous Decomposition Products: May form carbon monoxides, carbon dioxide, formaldehyde, phosgene, hydrogen chloride, acetylene and vinyl chloride when heated to decomposition.
Hazardous Polymerization: Will not occur.
Incompatibilities: Acids, alkalis, alkali earth metals, Oxidizing and reducing agents, Aluminum and/or magnesium powder, isocyanates, peroxides and hydroperoxides, epoxides, oxidants (chlorine, hydrogen peroxide, etc), active metals (potassium and magnesium, acetyl bromide, alkyl aluminum salts, beryllium dihydride, carbon tetrachloride, chloroform +heat, chloroform + sodium hydroxide, cyanuric acid, diethyl zinc, nitric acid, potassium-tert-butoxide, water reactive substances (e.g. Acetic anhydride, calcium carbide, etc)
Conditions to Avoid: High Temperatures, Heat, flames, ignition sources, oxidizers and incompatibles.

Section 11: Toxicological Information

For Dichloroethane: 500 mg/kg LD50 oral rat; 1000 mg/m3 LC50 inhalation rat.7H; 2800 mg/kg LD50 skin rabbit; irritation data (std Draize, rabbit) 63 mg/24 H skin - severe, Open Draize, 625 mg mild; investigated as a tumorigen, mutagen, reproductive effector.
For Methanol: Draize test, rabbit, eye: 40 mg moderate
Draize test, rabbit, eye: 100 mg/24 H Moderate
Draize test, rabbit, skin: 20 mg/24H Moderate
Inhalation, rat: LC50= 64,000 mg/kg
Oral, mouse: LD50= 7300 mg/kg
Oral rabbit: LD50 = 14,200 mg/kg
Oral, rat LD50= = 5628 mg/kg
Skin, rabbit: LD50 = 15,800 mg/kg

Epidemiology: Methanol has been showen to produce fetotoxicity in the embryo or fetus of laboratory animals. Specific developmental abnormalities include cardiovascular, musculoskeletal, and urogenital systems.
Teragenicity: Effects on newborn: Behaviorial, Oral, rat: TDLo= 7500 mg/kg (female 17-19 days after conception) Effects on embryo or fetus: Fetotoxicity, Inhalation, rat: TCLo= 10,000 ppm/tH (female7-15 days after conception). Specific Developmental abnormalities: Cardiovascular, Musculoskeletal, Urologenital, Inhalation, rat: TCLo=20,000 ppm/7H(7-14 days after conception).
Reproductive effects: Paternal Effects: Spermatogenesis: intraperitoneal, mouse TDLo=5g/kg (male 5 days pre-mating). Fertility: Oral, rat: TDLo = 35,295 mg/kg (female 1-15 days after conception).
Paternal effects: Testes, Epididmis, Sperm duct: Oral, rat: TDLo = 200 ppm/20H (male 78 weeks pre-mating).
Neurotoxicity: No information available foe Methanol.
Mutagenicity: DNA inhibition: Human Lymphocyte = 300 mmol/L. DNA damage: Oral, rat = 10 umol/kg. Mutation in microorganisms: Mouse Lymphocyte = 7,900 mg/L. Cytogenic analysis: Oral, mouse = 1 gm/kg
Other studies: Standard Draize test (Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize test: Administration into the eye (rabbit) = 40 mg (Moderate). Standard Draize test: Administration into the eye (rabbit) = 100 mg/24H (Moderate).

Section 12: Ecological Information

Ecotoxicity:
Fish: Fathead minnow: 29.4 g/L; 96 hr: LC50 (unspecified) Goldfish: 250 ppm; 11 hr: resulted in death Rainbow trout: 8000 mg/L; 48 Hr; LC50 (unspecified) Rainbow trout: LC50 = 13-68 mg/L 96 hr.; 12 degrees C Fathead minnows: LC50 = 29,400 mg/L; 96 Hr.; 25 degrees C, pH 7.63 Rainbow Trout:
LC50 = 8,000 mg/L; 48 hr.; Unspecified ria: Phytobacterium phosphoreum:
EC50 = 51,000-320,000 mg/L; 30 minutes; Microtox test No data available for Methanol.
Environmental:
Dangerous to aquatic life in high concentrations. Aquatic toxicity rating: TLm 96>1000 ppm.
May be dangerous if it enters water intakes. Methyl alcohol is expected to biodegrade in soil and water very rapidly. This product will show high soil mobility and will be degraded from the ambient atmosphere by the reaction with photochemically produced hydroxyl radicals with an estimated half-life of q17.8 days. Bioconcentration factor for fish (Golden ide) <10. Based on a log Kow of -0.77, the BCF value for methanol can be estimated to be 0.2.
When released into the soil, Ethylene Dichloride is expected to quickly evaporate. When released into the soil, this material may leach into groundwater. When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material is not expected to significantly bioaccumulate. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.
Environmental Toxicity: No information found.

Section 13: Disposal Considerations

WASTE DISPOSAL: DISPOSE OF IN ACCORDANCE TO ALL LOCAL, PROVINCIAL AND FEDERAL REGULATIONS

Section 14: Transport Information

UN NUMBER: 1230
TDG CLASSIFICATION: 3(6.1)
PACKING GROUP: II

Section 15: Other Regulatory Information

Other regulatory information not available

Section 16: Other Information

References: Not available
Other Special Considerations: Not available
Created: 03/02/2015

The information above is believed to be accurate and represents the best information currently available to us.

All Pyrotechnics should be used and handled with extreme caution, in accordance with all relevant regulations and codes only by experienced professional Pyrotechnicians.