

MATERIAL SAFETY DATA SHEET
Boosterfluid BFL-MK

SECTION 1 -

MSDS Name:
Catalog Numbers:
Synonyms:

Company Identification:
For information,
Emergency Number:

CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Methyl Ethyl Ketone
BFL-MK (#15076)
2-Butanone, ethyl methyl ketone, MEK, methyl acetone,
Booster Fluid for SPIRIFLAME® Flame Generators
Spirig Advanced Tech. Inc. / see headline
PHONE SAT **USA 413-788-6191** office hours ET
1-800-535-5053 (Infotrac)

SECTION 2 -

CAS# EINECS#
78-93-3 201-159-01
Proprietary
7732-18-5 231-791-2

COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Name
Methyl ethyl ketone 97%
Additives, various ≤2%
Water ≤1%

SECTION 3 -

EMERGENCY OVERVIEW

HAZARDS IDENTIFICATION

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. AFFECTS CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAF-T-DATA (tm) Ratings (Provided here for your convenience)

Health Rating
Flammability Rating
Reactivity Rating
Contact Rating
Lab Protective Equipment

2 - Moderate (Life)
3 - Severe (Flammable)
1 - Slight
2 - Moderate
GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES;
CLASS B EXTINGUISHER
Red (Flammable)

Storage Color Code
Potential Health Effects
Inhalation

Causes irritation to the nose and throat. Concentrations above the TLV may cause headache, dizziness, nausea, shortness of breath, and vomiting. Higher concentrations may cause central nervous system depression and unconsciousness. May produce abdominal pain, nausea. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms expected to parallel inhalation. Causes irritation to skin. Symptoms include redness, itching, and pain. May be absorbed through the skin with possible systemic effects. Vapors are irritating to the eyes. Splashes can produce painful irritation and eye damage. Prolonged skin contact may defat the skin and produce dermatitis. Chronic exposure may cause central nervous system effects. Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

Ingestion

Skin Contact

Eye Contact

Chronic Exposure

Aggravation of Pre-existing Conditions

SECTION 4 -

FIRST AID MEASURES

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion

Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

SECTION 5 -

Fire

FIRE FIGHTING MEASURES

Flash point: -7C (16F) CC
Autoignition temperature: 404C (759F)
Flammable limits in air % by volume:
lel: 1.8; uel: 11.5
Extremely Flammable.

Explosion	Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. Sensitive to static discharge.
Fire Extinguishing Media	Dry chemical, foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.
Special Information	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. This highly flammable liquid must be kept from sparks, open flame, hot surfaces, and all sources of heat and ignition.

SECTION 6 - ACCIDENTAL RELEASE MEASURES
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. This highly flammable liquid must be kept from sparks, open flame, hot surfaces, and all sources of heat and ignition.

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.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION
Airborne Exposure Limits -OSHA Permissible Exposure Limit (PEL): 200 ppm (TWA)
Ventilation System -ACGIH Threshold Limit Value (TLV): 200 ppm (TWA), 300 ppm (STEL)
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details. Use explosion-proof equipment.
Personal Respirators (NIOSH Approved) If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece 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. For emergencies or instances where the exposure levels are not known, use a full-facepiece 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. Butyl rubber is a suitable material 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, colorless liquid
Odor Sharp mint-like odor
Solubility 29 g in 100 g of water
Specific Gravity 0.8050 @ 20C/4C
pH No information found
% Volatiles by volume @21C 100
(70F)
Boiling Point 80C (176F)
Melting Point -86C (-123F)
Vapor Density 2.5 (Air=1)
Vapor Pressure (mm Hg) 78 @ 20C (68F)
Evaporation Rate 2.7 (Ether=1)
Molecular Weight: 72.11

SECTION 10 -

Stability
Hazardous Decomposition Products
Hazardous Polymerization

STABILITY AND REACTIVITY

Stable under ordinary conditions of use and storage.
Carbon dioxide and carbon monoxide may form when heated to decomposition.
Will not occur.

Incompatibilities
Conditions to Avoid

Oxidizing materials, caustics, amines, ammonia, strong bases, chloroform, chlorosulfonic acid, oleum, potassium-t-butoxide, heat or flame, hydrogen peroxide, nitric acid. Can attack many plastics, resins and rubber.
Heat, flames, ignition sources and incompatibles.

SECTION 11 -

Toxicological Data
Reproductive Toxicity
Methyl Ethyl Ketone

TOXICOLOGICAL INFORMATION

Oral rat LD50: 2737 mg/kg; inhalation rat LC50: 23,500 mg/m3/8-hr; skin rabbit LD50: 6480 mg/kg; investigated as a mutagen, reproductive effector.
Has shown teratogenic effects in laboratory animals.
NTP Carcinogen: Known: No; Anticipated: No

SECTION 12 -

Environmental Fate
Environmental Toxicity

ECOLOGICAL INFORMATION

When released into the soil, this material may leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released into water, this material may evaporate to a moderate extent. When released into water, this material is expected to have a half-life between 10 and 30 days. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days.
This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

SECTION 13 -

DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

**SECTION 14 -
Domestic (Land, D.O.T.)**

Proper Shipping Name
Hazard Class
UN Number
Packing Group

TRANSPORT INFORMATION

METHYL ETHYL KETONE
3
UN 1193
II

International (Water, I.M.O.)

Proper Shipping Name
Hazard Class
UN Number
Packing Group:

ETHYL METHYL KETONE
3
UN 1193
II

SECTION 15

REGULATORY INFORMATION

F, Xi
R11 - Highly flammable
R36 - Irritating to eyes
R66 - Repeated exposure may cause skin drying or cracking
R67 - Vapours may cause drowsiness or dizziness
S2 - Keep out of the reach of children
S9 - Keep container in a well-ventilated place
S16 - Keep away from sources of ignition - No smoking

Chemical Inventory Status -Part 1 TSCA: Yes; EC: Yes; Japan: Yes; Australia: Yes
Chemical Inventory Status -Part 1 Korea: Yes, DSL (Canada): Yes; NDSL (Canada): Yes; Phil.: Yes
Federal, State & International Regulations -Part 1 SARA 302: RQ: No; TPQ: No
SARA 313: List: Yes, Chemical Catg: No
Federal, State & International Regulations -Part 2 CERCLA: 5000; RCRA (261.33): U159, TSCA (8(d)): No;
Chemical Weapons Convention No

TSCA 12(b) CTDA	No Yes Acute: Yes Chronic: Yes Fire: Yes
SARA 311/312	Pressure: No Reactivity: No
Australian Hazchem Code Poison Schedule	2[Y]E S5
WHMIS	This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

SECTION 16 -
NFPA Hazard Ratings

ADDITIONAL INFORMATION
Health: 1 Flammability: 3 Reactivity: 0



Label Hazard Warning DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. AFFECTS CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Avoid breathing vapor.

Label First Aid Avoid contact with eyes, skin and clothing.
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get medical attention.

MSDS Creation Date:
12/28/1994 Revision Date:
7/15/1997 08/10/2001
04/20/2006 11/04/2008

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