

MATERIAL SAFETY DATA SHEET

Booster Fluid BFL-A (#15077) for SPIRFLAME®

SECTION 1 -

MSDS Name:
Catalog Numbers:
Synonyms:

Company Identification:
For information,
Emergency Number:

CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Acetone

BFL-A or SF/BFL-MA Acetone is the major content in the Booster fluid BFL-A Dimethylformaldehyde, dimethyl ketone, 2-propanone, pyroacetic acid, pyroacetic ether

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SECTION 2 -

COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	%	EINECS#
67-64-1	Acetone	≤ 95	200-662-2
Proprietary	Additives, various	< 3	proprietary
7732-18-5	Water	Balance	231-791-2

Hazard Symbols:	F
Risk Phrases:	11

SECTION 3 -

EMERGENCY OVERVIEW

Health Rating:
Flammability Rating:
Reactivity Rating:
Contact Rating:
Lab Protective Equip:

Storage Color Code:
Appearance:
Danger!

Target Organs:
Potential Health Effects
Eye:

Skin:

Ingestion:

Usual human fatal dose:

Inhalation:

Chronic:

SECTION 4 -

Eyes:

Skin:

Ingestion:

Inhalation:

Notes to Physician:
Antidote:

HAZARDS IDENTIFICATION

Danger! Extremely flammable liquid. May cause central nervous system depression. May cause liver and kidney damage. Causes eye and skin irritation. Causes digestive and respiratory tract irritation. Target Organs: Kidneys, central nervous system, liver, respiratory system.

1 - Slight

4 - Extreme (Flammable)

2 - Moderate

1 - Slight

GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES;
CLASS B EXTINGUISHER
Red (Flammable)

Clear, colorless. Flash Point: 12 deg C.

Flammable liquid. Harmful if inhaled. This substance has caused adverse reproductive and fetal effects in animals. May cause central nervous system depression. May be absorbed through the skin. May cause kidney damage. **Poison!** May cause respiratory and digestive tract irritation. Cannot be made non-poisonous. Causes eye and skin irritation. May be fatal or cause blindness if swallowed.

Kidneys, central nervous system, liver, eyes.

Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury.

Exposure may cause irritation characterized by redness, dryness, and inflammation.

May cause irritation of the digestive tract. May cause central nervous system depression, kidney damage, and liver damage. Symptoms may include: headache, excitement, fatigue, nausea, vomiting, stupor, and coma.

Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause liver and kidney damage. May cause motor incoordination and speech abnormalities.

Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation may cause effects similar to those of acute inhalation.

FIRST AID MEASURES

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.

Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Treat symptomatically and supportively.

No specific antidote exists.

SECTION 5 -

General Information:

Extinguishing Media:

Special Information:

Autoignition Temperature:

Flash Point:

Flammable limits in air:

NFPA Rating:

Explosion Limits,

FIRE FIGHTING MEASURES

Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam.

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. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire. Vapors can flow along surfaces to distant ignition source and flash back

869 deg F (465.00 deg C)

-4 deg F (-20.00 deg C)

Lower: 2,5 vol % Upper: 12.8 vol %

health-1; flammability-3; reactivity-0

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Moderate explosion hazard and dangerous fire hazard when exposed to heat, sparks or flames. Sensitive to static discharge.

SECTION 6 -

General Information:

Spills/Leaks:

ACCIDENTAL RELEASE MEASURES

Use proper personal protective equipment as indicated in Section 8.

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

SECTION 7 -

Handling:

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.

Storage:

as above

SECTION 8 -

Engineering Controls:

EXPOSURE CONTROLS, PERSONAL PROTECTION

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits			
Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
2-propanone	750 ppm ; 1780	250 ppm TWA; 590	1000 ppm TWA; mg/m3; 1000 ppm mg/m3 TWA 2400 mg/m3 TWA STEL; 2380 mg/m3 STEL
Water	none listed	none listed	none listed

Personal Protective Equipment

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.

Eyes:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Skin: Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure.

Clothing: Wear polyethylene gloves, apron, and/or clothing.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

SECTION 9 -

Physical State: Liquid

Appearance: Clear, colorless

Odor: Sweetish

pH: Not available.

Vapor Pressure: 180 @ 20C (68F) mm Hg

Vapor Density: 2 (Air=1)

Evaporation Rate: 7.7 (Ether=1)

Viscosity: 0.55 cP 20 deg (fluid as water)

Boiling Point: 64.7 deg C (133.2F) @ 760.00mm Hg

Freezing/Melting Point: -98C (-139.6F)

Decomposition Temperature: Not available.

Solubility: fully miscible in water

Specific Gravity/Density: 0.79g/cm³

Molecular Formula: C₃H₆O

Molecular Weight: 58.14

PHYSICAL AND CHEMICAL PROPERTIES**SECTION 10 -**

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Heat, flames, ignition sources and incompatibles. High temperatures;

Incompatibilities with Other Materials: Forms explosive mixtures with hydrogen peroxide, acetic acid, nitric acid, nitric acid+sulfuric acid, chromic anhydride, chromyl chloride, nitrosyl chloride, hexachloromelamine, nitrosyl perchlorate, nitryl perchlorate, permonosulfuric acid thiodiglycol+hydrogen peroxide.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

STABILITY AND REACTIVITY**SECTION 11 -**

RTECS#:CAS# 67-64-1: AL3150000 LD50/LC50: CAS# 67-64-1: Inhalation, rat: LC50 =50100 mg/m³/8H; Oral, mouse: LD50 = 3 gm/kg; Oral, rabbit: LD50 = 5340 mg/kg; Oral, rat: LD50 = 5800 mg/kg; Skin, rabbit: LD50 = 20 gm/kg.

Carcinogenicity: 2-propanone - - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: Fertility: post-implantation mortality. Ihl, mam: TCLo=31500ug/m³/24H (1-13D preg)

Neurotoxicity: No information available.

Mutagenicity: Cytogenetic analysis: hamster fibroblast, 40 g/L Sex chromosome loss/non-disjunction: S.cerevisiae, 47600 ppm

Other Studies: None

TOXICOLOGICAL INFORMATION**SECTION 12 -**

Ecotoxicity: Rainbow trout LC50=5540 mg/L/96H Sunfish (tap water), death at 14250 ppm/24H Mosquito fish (turbid water) TLm=13000 ppm/48H Volatilizes, leeches, and biodegrades when released to soil.

Environmental Fate:

Physical/Chemical:

Other:

ECOLOGICAL INFORMATION**SECTION 13 -**

RCRA D-Series Maximum Concentration of Contaminants: Not listed.

RCRA D-Series Chronic Toxicity Reference Levels: Not listed.

RCRA F-Series: Not listed.

DISPOSAL CONSIDERATIONS

RCRA P-Series: Not listed.
RCRA U-Series: waste number U002 (Ignitable waste)
This material is banned from land disposal according to RCRA.

SECTION 14 - TRANSPORT INFORMATION

	Shipping Name	Hazard Class	UN Number	Packing Group	Other Information
US Dot	ACETONE	3	1090	II	
IMO	ACETONE	3.2, 6.1	1090	II	
IATA	ACETONE	df	1090	II	
RID/ADR	ACETONE	3	1090	II	
Canadian TDG	ACETONE				Flashpoint -20°C

SECTION 15 REGULATORY INFORMATION

US FEDERAL TSCA

CAS# 67-64-1 is listed on the TSCA inventory.

Health & Safety Reporting List
Chemical Test Rules

None of the chemicals are on the Health & Safety Reporting List.
None of the chemicals in this product are under a Chemical Test Rule Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
SARA
Section 302 (RQ) final
Section 302 (TPQ)

None of the chemicals in this material have a SNUR under TSCA.

SARA Codes
Section 313

RQ = 5000 pounds (2270 kg)
None of the chemicals in this product have a TPQ.
CAS # 67-64-1: acute, chronic, flammable, sudden release of pressure.
This material contains 2-propanone (CAS# 67-64-1, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 67-64-1

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.
None of the chemicals in this product are listed as Hazardous
None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
None of the chemicals in this product are considered highly hazardous by OSHA.
2-propanone can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Clean Water Act:
Substances under the CWA

OSHA:
STATE

California No Significant Risk
Level:

European/International Regulations / European Labeling in Accordance with EC Directives

Hazard Symbols:
Risk Phrases:

F
R 11 Highly flammable
R 36 Irritating to eyes
R 66 Repeated exposure may cause skin dryness or cracking
R 67 Vapours may cause drowsiness and dizziness
S 2 Keep out of the reach of children
S 9 Keep container in a well-ventilated place.
S 16 Keep away from sources of ignition - No smoking.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

CAS# 67-64-1:

Canada is listed on Canada's DSL/NDSL List.
This product has a WHMIS classification of B2, D1A, D2B.
is listed on Canada's Ingredient Disclosure List.

WGK (Water Danger/Protection)
Exposure Limits CAS# 67-64-1

OEL-AUSTRALIA:TWA 500 ppm (1185 mg/m3);STEL 1000 ppm. OEL-AUSTRIA:TWA 750 ppm (1780 mg/m3). OEL-BELGIUM:TWA 750 ppm (1780 mg/m3);STEL 1000 pp. OEL-CZECHOSLOVAKIA:TWA 800 mg/m3;STEL 4000 mg/m3. OEL-DENMARK:TWA 250 ppm (600 mg/m3). OEL-FINLAND:TWA 500 ppm (1200 mg/m3);STEL 625 ppm (1500 mg/m3). OEL-FRANCE:TWA 750 ppm (1800 mg/m3). OEL-GERMANY:TWA 1000 ppm (2400 mg/m3). OEL-HUNGARY:TWA 600 mg/m3;STEL 1200 mg/m3. OEL-INDIA:TWA 750 ppm (1780 mg/m3);STEL 1000 ppm (2375 mg/m3). OEL-JAPAN:TWA 200 ppm (470 mg/m3). OEL-THE NETHERLANDS:TWA 750 ppm (1780 mg/m3) JAN9. OEL-THE PHILIPPINES:TWA 1000 ppm (2400 mg/m3). OEL-POLAND:TWA 200 mg/m3. OEL-RUSSIA:TWA 200 ppm;STEL 200 mg/m3. OEL-SWEDEN:TWA 250 ppm (600 mg/m3);STEL 500 ppm (1200 mg/m3). OEL-SWITZERLAND:TWA 750 ppm (1780 mg/m3). OEL-TURKEY:TWA 1000 ppm (2400 mg/m3). OEL-UNITED KINGDOM:TWA 1000 ppm (2400 mg/m3);STEL 1250 ppm. OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV. OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

SECTION 16 -

NFPA Ratings:

ADDITIONAL INFORMATIONS

Health 1
Flammability 3
Reactivity 0

NFPA Hazard Rating



MSDS Creation Date: 12/12/1995 Revision dates: 12/12/1997 19/06/2001 **04/20/2006**