

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY**

**1.1 Product identifier**

Trade name: **Booster Fluid BFL-M (#11700) / Methanol**  
INDEX-No.: 603-001-00-X  
CAS-No.: 67-56-1  
EC-No.: 200-659-6

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Use of the substance: Additive for hydrogen gas for microflame generators SPIRFLAME®, Quantity around 0,5 liters per generator

**1.3 Details of the supplier of the safety data sheet**

Company: Dipl. Ing. Ernest Spirig  
Hohlweg 1  
8640 Rapperswil  
Switzerland, www.spirig.com  
Phone: +41 55 222 6900  
Fax: +41 55 222 6969  
Responsible person: phone: +41 55 222 6900, Email: info@spirig.com

**1.4 Emergency telephone number** Spirig: phone: +41 (0) 55 / 222 6900

**SECTION 2: HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Hazard Class	Hazard Category	Target Organs	Hazard Statements
Flammable liquids	Category 2	---	H225
Acute toxicity (Inhalation)	Category 3	---	H331
Acute toxicity (Dermal)	Category 3	---	H311
Acute toxicity (Oral)	Category 3	---	H301
Specific target organ toxicity - single exposure (Inhalation)	Category 1	---	H370
Specific target organ toxicity - single exposure (Oral)	Category 1	---	H370

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Most important adverse effects**

Human Health: See section 11 for toxicological information.  
Physical and chemical hazards: See section 9 for physicochemical information.  
Potential environmental effects: See section 12 for environmental information.

**2.2 Label elements**

**Labeling according to Regulation (EC) No 1272/2008**

**Hazard symbols**



Signal word: **Danger**  
Hazard statements: H225 Highly flammable liquid and vapor.  
H331 Toxic if inhaled.  
H311 Toxic in contact with skin.  
H301 Toxic if swallowed  
H370 Causes damage to organs if inhaled.  
H370 Causes damage to organs if swallowed.

**Precautionary statements**

Prevention: P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
Response: P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P308 + P311 IF exposed or concerned: call a POISON CENTER or doctor/physician.

**Hazardous components, which must be listed on the label: METHANOL**

**2.3 Other hazards**

For Results of PBT and vPvB assessment see section 12.5.  
No other information is available.

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

**3.1 Substances**

**Chemical nature: Solvent**

Hazardous Components	Amount [%]	Classification (Regulation (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
<b>Methanol</b> INDEX-No.: 603-001-00-X CAS-No.: 67-56-1 EC-No.: 200-659-6	93	Flam. Liq.2 Acute Tox. 3 Acute Tox. 3 Acute Tox. 3 STOT SE1	H225 H331 H311 H301 H370
<b>Additives</b>	7%	No hazardous component	

For the full text of the H-Statements mentioned in this Section, see Section 16.

**SECTION 4: FIRST AID MEASURES**

**4.1 Description of first aid measures**

- General advice: First aider needs to protect himself. Remove from exposure, lie down. Take off all contaminated clothing immediately. Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.
- If inhaled: Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Oxygen, if needed. No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus. Call a physician immediately.
- In case of skin contact: Wash off immediately with soap and plenty of water. Obtain medical attention.
- In case of eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes. Consult an eye specialist immediately.
- If swallowed: Clean mouth with water and drink afterwards plenty of water. Induce vomiting, but only if victim is fully conscious. Administer approx. 100 ml ethanol 40 % (hard liquor). Never give anything by mouth to an unconscious person. Call a physician immediately. If a person vomits when lying on his back, place him in the recovery position.

**4.2 Most important symptoms and effects, both acute and delayed**

- Symptoms: See Section 11 for more detailed information on health effects and symptoms.
- Effects: See Section 11 for more detailed information on health effects and symptoms

**4.3 Indication of any immediate medical attention and special treatment needed**

- Treatment: Treat symptomatically. No further information available.

**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

- Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable extinguishing media: High volume water jet

**5.2 Special hazards arising from the substance or mixture**

- Specific hazards during firefighting: The vapor may be invisible, heavier than air and spread along ground. Vapors may form explosive mixtures with air. Flash back possible over considerable distance. In case of fire hazardous decomposition products may be produced such as: Carbon oxides

**5.3 Advice for firefighters**

- Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective suit)
- Further information: Cool closed containers exposed to fire with water spray. Heating will cause a pressure rise - with risk of bursting. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

- Personal precautions: Use personal protective equipment. Keep people away from and upwind of spill/leak. Provide adequate ventilation. Keep away from heat and sources of ignition. Avoid contact with skin and eyes. Do not breathe gas/fumes/vapor/spray. For personal protection see section 8.

**6.2 Environmental precautions**

Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

**6.3 Methods and materials for containment and cleaning up**

- Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
- Further information: Treat recovered material as described in the section "Disposal considerations".

**6.4 Reference to other sections**

See Section 1 for emergency contact information.  
 See Section 8 for information on personal protective equipment.  
 See Section 13 for waste treatment information.

**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Advice on safe handling:

Keep container tightly closed. Use personal protective equipment. Avoid contact with the skin and the eyes. Do not breathe the vapors. Provide sufficient air exchange and/or exhaust in workrooms. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

Hygiene measures:

Keep away from food, drink and animal feeding stuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately. Keep working clothes separately. Avoid contact with the skin and the eyes. Do not breathe vapors or spray mist.

**7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers:

Store in a place accessible by authorized persons only. Keep in an area equipped with solvent resistant flooring.  
 Suitable materials for containers: Stainless steel; Mild steel;  
 Unsuitable materials for containers: Lead; Aluminium; Zinc; polystyrene

Advice on protection against fire and explosion:

Combustible liquid. Keep away from sources of ignition - No smoking. Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Take measures to prevent the build up of electrostatic charge. Use only in an area containing explosion proof equipment.

Fire-fighting class: Highly flammable and extremely fast burning down; Flp < 21°C

Further information on storage conditions:

Keep tightly closed in a dry and cool place. Keep in a well-ventilated place. Keep away from heat.

Advice on common storage: Keep away from food, drink and animal feeding stuffs. Do not store together with oxidizing and self-igniting products.

German storage class: 3 Flammable liquids

**7.3 Specific end use(s)**

Additive for hydrogen gas for microflame generators SPIRFLAME®, Quantity around 0,5 liters per generator

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

**8.1 Control parameters**

Component:	Methanol	CAS-Nr. 67-56-1
<b>Derived No Effect Level (DNEL) / Derived Minimal Effect Level (DMEL)</b>		
DNEL	Workers, Acute - systemic effects, Skin contact	40 mg/kg bw/day
DNEL	Workers, Acute - systemic effects, Inhalation	260 mg/m3
DNEL	Workers, Acute - local effects, Inhalation	260 mg/m3
DNEL	Workers, Long-term - systemic effects, Skin contact	40 mg/kg bw/day
DNEL	Workers, Long-term - systemic effects, Inhalation	260 mg/m3
DNEL	Workers, Long-term - local effects, Inhalation	260 mg/m3
DNEL	Consumers, Acute - systemic effects, Skin contact	8 mg/kg bw/day
DNEL	Consumers, Acute - systemic effects, Inhalation	50 mg/m3
DNEL	Consumers, Acute - systemic effects, Ingestion	8 mg/kg bw/day
DNEL	Consumers, Long-term - local effects, Inhalation	50 mg/m3
DNEL	Consumers, Long-term - systemic effects, Ingestion	8 mg/kg bw/day
DNEL	Consumers, Long-term - systemic effects, Inhalation	50 mg/m3
DNEL	Consumers, Long-term - systemic effects, Skin contact	8 mg/kg bw/day
DNEL	Consumers, Acute - local effects, Inhalation	50 mg/m3

**Predicted No Effect Concentration (PNEC)**

Fresh Water	154 mg/l
Marine Water	15,4 mg/l
Sediment	570,4 mg/kg dry weight (d.w.)
Soil	23,5 mg/kg ww
Sewage treatment plant (STP)	100 mg/l
Intermittent releases	1540 mg/l

**Other occupational exposure limit values**

EU ELV, Time weighted average (TWA): 200 ppm, 260 mg/m3      indicative

SUVA If in compliance with the OEL and BEL values, then there should be no risk of reproductive damage.

SUVA, short term exposure limit (STEL): 800 ppm, 1040 mg/m3, (4x15 minutes/shift)

SUVA, Skin designation: Can be absorbed through the skin.

SUVA, Time weighted average: 200 ppm, 260 mg/m3

**8.2 Exposure controls**

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**Appropriate engineering controls**

Refer to protective measures listed in sections 7 and 8.

**Personal protective equipment**

Respiratory protection: Advice: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit. Recommended Filter type:AX

Hand protection: Advice: Wear suitable gloves. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Protective gloves should be replaced at first signs of wear.

Material	Butyl-rubber
Break through time	>= 8h
Glove thickness	0,5 mm

Eye protection: Advice: Tightly fitting safety goggles

Skin and body protection: Advice: impervious clothing

**Environmental exposure controls**

General advice: Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

Form: liquid  
 Color: colorless  
 Odor: alcohol-like  
 Odor threshold: no data available  
 pH: not applicable  
 Melting point/range: -97.8 °C  
 Boiling point/range: 79 - 81 °C  
 Flash point: 9.7 °C (closed cup)  
 Evaporation rate: no data available  
 Flammability (solid, gas): Not applicable  
 Lower Explosion limit: 4,4Vol-%  
 Upper Explosion limit: 38,5 Vol-%  
 Vapor pressure: at 25 °C: 169,27 hPa  
 Relative Vapor density: 1,1  
 Density: at 20°C: 0,79 g/cm3  
 Water solubility: completely miscible  
 Solubility/qualitative: miscible with most organic solvents  
 Partition coefficient: n-octanol/water: log Kow -0.77  
 Auto-ignition temperature: 455°C  
 Thermal decomposition: Can be distilled at normal pressure without decomposition  
 Viscosity, dynamic: 0,544-0,59 mPa.s. (at 25°C)  
 Explosive properties: EU legislation: Formation of explosive air/vapour mixtures is possible  
 Explosivity: Product is not explosive  
 Oxidizing properties: none

**9.2 Other information**

No further information available

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity**

Advice: Vapours may form explosive mixture with air.

**10.2 Chemical stability**

No decomposition if stored and applied as directed. No further information available.

**10.3 Possibility of hazardous reactions**

Hazardous reactions: No dangerous reaction known under conditions of normal use.

**10.4 Conditions to avoid**

Conditions to avoid: Heat, flames and sparks. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or source of ignition.

Thermal decomposition: no data available

**10.5 Incompatible materials**

Materials to avoid: Oxidizing agents, Alkali metals, Iodine, Aluminium, Lead, Magnesium

**10.6 Hazardous decomposition products**

Formaldehyde, Carbon monoxide, Gives off hydrogen by reaction with metals.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

**Acute Toxicity:** Oral: Toxic if swallowed.  
Inhalation: Toxic by inhalation. Inhalation may cause headache, dizziness, tiredness and nausea. After many hours without problems vomiting, gastric pain, difficulty to see, difficulty to breathing and unconsciousness may occur at inhalation of high concentrations.  
Dermal: Toxic in contact with skin.

**Other relevant toxicity information:**

Dangerous amounts can be absorbed through the skin. Avoid inhalation of vapour or mist. Risk of blindness! An excessive exposure of laboratory animals results in toxic effects on the kidney and the liver. This substance should be handled with particular care.

**Component Methanol CAS-Nr. 67-56-1**

Acute toxicity: Oral: Toxic if swallowed.  
Inhalation: Toxic if inhaled.  
Dermal: Toxic in contact with skin.  
Irritation: Skin: Result: no skin irritation (Rabbit) (BASF – Test)  
Eyes: Result: No eye irritation (Rabbit) (OECD Test Guideline 405)  
Sensitisation: Result: not sensitizing (Maximisation Test (GPMT); Guinea pig) (OECD Test Guideline 406)

**CMR effects**

CMR Properties: Carcinogenicity: Animal testing did not show any carcinogenic effects.  
MUTAGENICITY: In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects  
Teratogenicity: Not classified due to data which are conclusive although insufficient  
Reproductive toxicity: Not classified due to data which are conclusive although insufficient  
Genotoxicity in vivo: Result: negative (in vivo assay, Mammalian-Animal)  
Teratogenicity: NOAL Teratog: 1,3 mg/L (Rat)  
NOAL Teratog.: 2,39 mg/L (Monkey)  
Reproductive toxicity: NOAL Parent: 1,33 mg/L (Rat)

**Specific Target Organ Toxicity**

Single exposure: Inhalation: Causes damage to organs. Experience with humane exposure.  
Ingestion: Causes damage to organs.  
Repeated exposure: Remark: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Other toxic properties**

Aspiration hazard: No aspiration toxicity classification.

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

**Component: Methanol CAS-Nr. 67-56-1**

Acute Toxicity: Fish: LC50: 15400 mg/l (Lepomis macrochirus; 96 h) (flow-through test; EPA 600/3-75/009)  
Toxicity to daphnia and other aquatic invertebrates: EC50: > 1000 mg/l (Daphnia magna (Water flea); 48 h) (OECD Test Guideline 202)  
Algae: EC50: 22000 mg/l (Pseudokirchneriella subcapitata (green algae); 96 h)  
Bacteria: EC50: 20000 mg/l (Bacteria; 15 h)  
IC50: 1000 mg/l (Bacteria; 24 h)  
IC50: > 1000 mg/l (activated sludge; 3 h)  
Chronic Toxicity: Fish: 7900 mg/l (fish; 200 h)

**12.2. Persistence and degradability**

**Component: Methanol CAS-Nr. 67-56-1**

Biodegradability: Result: 97 % (Marine water; Exposure Time: 20 d), Readily biodegradable  
95 % (Fresh water; Exposure Time: 20 d)  
83 - 91 % (Fresh water sediment; Exposure Time: 3 d)  
71,5 % (Fresh water; Exposure Time: 5 d)  
69 % (Marine water; Exposure Time: 5 d)  
46,3 - 53,5 % (soil; Exposure Time: 5 d)

**12.3 Bioaccumulative potential**

Result: log Kow -0.77, BCF: < 10, the product has low potential bioaccumulation.

**12.4 Mobility in soil**

Result: The product is mobile in water environment.

**12.5 Results of PBT and vPvB assessment**

Result: This substance is not considered to be persistent, bioaccumulating nor toxic (PBT),. This substance is not considered to be very persistent and very bioaccumulating (vPvB).

**12.6 Other adverse effects**

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Additional ecological information:

Do not flush into surface water or sanitary sewer system. Danger to drinking water if even extremely small quantities leak into soil.

**SECTION 13: DISPOSAL CONSIDERATIONS**
**13.1 Waste treatment methods**
**Product** Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.

**Contaminated packaging**

Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Packagings that cannot be cleaned are to be disposed of in the same manner as the product. Do not burn, or use a cutting torch on, the empty drum. Risk of explosion.

**European Waste Catalogue Number**

No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

**SECTION 14: TRANSPORT INFORMATION**
**14.1 UN number** 1230

**14.2 UN proper shipping name**

 ADR/RID: METHANOL  
 IMDG, IATA: METHANOL

**14.3 Transport hazard class(es)**

	Class	Labels	Classification code	Hazard identification number	Tunnel restriction code / EmS
ADR	3	3, 6.1	FT1	336	D/E
RID	3	3, 6.1	FT1	336	-
IMDG	3	3, 6.1			F-E, S-D
IATA	3	3, 6.1			

**14.4 Packaging group** II (ADR, RID, IMDG, IATA)

**14.5 Environmental hazards**

Environmentally hazardous according ADR: no

**14.6 Special precautions for user**

Note: not applicable

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

IMDG: not applicable

**SECTION 15: REGULATORY INFORMATION**
**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

 CPID: 295254-43  
 Threshold quantity MAO: 2.000 kg (list with substances and preparations (BAFU, 2006))  
 Ordinance protection of air: LRV (CH): chapter 72 – class 3

**National regulations - Switzerland**

VOC (CH): Methanol, ex. 2905.1190

EU. REACH: Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC), Point Nos.: 40, Lusted

**USA**

NFPA Hazard Rating: Health: 1 (Slightly Hazardous), Flammability: 3 (Highly Flammable), Reactivity: 0 (Stable)


**Notification status – Methanol:**

Regulatory list	Notification	Notification number
AICS	Yes	
DSL	Yes	
INV (CN)	Yes	
EINECS	Yes	200-659-6
TSCA	Yes	

**15.2 Chemical Safety Assessment**

No data available

**SECTION 16: OTHER INFORMATION****Additional information****Full text of H-Statements referred to under sections 2 and 3:**

H225	Highly flammable liquid and vapor.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled
H370	Causes damage to organs

Reason for the last update: General update 22.06.2021

Made: 11.12.1998

**Key literature references and sources for data:**

Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship.

The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.