Fiamm Sports Marine Big Horn

Safety Data Sheet

According to Federal Register Rules and Regulations

Revision date:01/15/2015 :

SECTION 1: Identification of the Substance/Mixture and CompanyIdentificatioon

1.1. Product identifier

Product form	: Substance
Trade name	: Fiamm Sports Marine Big Horn 8 oz.
CAS No	: 811-97-2
Formula	: C2H2F4

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

Use of the substance/mixture : Follow Label Directions

Use of the substance/mixture : Aerosol Horn

1.3. Details of the supplier of the safety data sheet

MAX PRO

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Compressed gas H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS04

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H280 - Contains gas under pressure; may explode if heated

Precautionary statements (GHS-US) : P410+P403 - Protect from sunlight. Store in a well-ventilated place
P251 - Pressurized container: Do not pierce or burn, even after use
P412 - Do not expose to temperatures exceeding 50°C/ 122°F

2.3. Other hazards

Other hazards not contributing to the classification: Contains gas under pressure; may explode if heated. Intentional misuse and inhalation abuse may cause cardiac or central nervous systems effects. Warning. May cause frostbite in contact with skin.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Name	Product identifier	%	Classification (GHS-US)
1,1,1,2-tetrafluoroethane	(CAS No)811-97-2	> 99	Compressed gas, H280

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First Aid Measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Rinse with water. Take victim to a doctor if irritation persists. In case of frostbites: Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

First-aid measures after ingestion : Not applicable.

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

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Accelerated heart action. Disturbances of heart rate. Coordination disorders. Feeling of weakness. Respiratory difficulties. Vomiting. Nausea. Disturbances of consciousness. Risk of lung edema. Respiratory collapse.

Symptoms/injuries after skin contact : Red skin. Blisters. Frostbites.

Symptoms/injuries after eye contact : Not applicable.

Symptoms/injuries after ingestion : Not applicable.

Chronic symptoms : No effects known.

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

No additional information available

SECTION 5: Fire Fighting Measures

5.1. Extinguishing media

suitable extinguishing media : EXTINGUISHING MEDIA FOR SURROUNDING FIRES: Adapt extinguishing media to the environment.

Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD. Non combustible.

Explosion hazard : INDIRECT EXPLOSION HAZARD. Heat may cause pressure rise in tanks/drums: explosion risk.

Reactivity	: On burning: release of toxic and corrosive gases/vapors (hydrofluoric acid, carbon monoxide - carbon dioxide, carbonylfluoride). Reacts with (some) acids.

5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: consider evacuation.
Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: cool from behind cover. Do not move the load if exposed to heat. After cooling: persistent risk of physical explosion. Dilute toxic gases with water spray.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.
Other information	: NFPA Aerosol Level 1.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Insulating gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus.
Emergency procedures	: Keep upwind. Mark the danger area. Seal off low-lying areas. Close doors and windows of adjacent premises. No naked flames. Carry out specific temperature controls. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation.

6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Tip the container on one side to stop the leakage. Do not spray water on unheated tank walls.
Methods for cleaning up	: Damaged/cooled tanks must be emptied.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Additional hazards when processed	: Pressurized container: Do not pierce or burn, even after use.
Precautions for safe handling	: Comply with the legal requirements. Handle and open the container with care. Thoroughly clean/dry the installation before use. Keep away from naked flames/heat. Observe normal hygiene standards. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Measure the oxygen concentration in the air.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.
Storage temperature	: < 50 °C
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: (strong) acids.
Storage area	: Store in a cool area. Keep out of direct sunlight. Ventilation at floor level. Aboveground. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: with pressure relief valve. clean. correctly labeled. meet the legal requirements.
Packaging materials	: SUITABLE MATERIAL: No data available. MATERIAL TO AVOID: No data available.

7.3. Specific end use(s)

Follow Label Directions.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

8.2. Exposure controls

Personal protective equipment : Gloves. Safety glasses. Avoid all unnecessary exposure.

Materials for protective clothing : GIVE GOOD RESISTANCE: neoprene. nitrile rubber. butyl rubber.
Hand protection : Insulated gloves.
Eye protection : Safety glasses.
Skin and body protection : Protective clothing.
Respiratory protection : High vapor/gas concentration: self-contained respirator.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Appearance : Gas.
Molecular mass : 102.03 g/mol
Color : Colorless.

Odor : Ether-like odor.

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : -101 °C

Freezing point : No data available

Boiling point : -26 °C

Flash point : Not applicable

Critical temperature : 101 °C
Self ignition temperature : > 743 °C

Decomposition temperature : 368 °C

Flammability (solid, gas) : No data available

Vapor pressure : 5720 hPa

Critical pressure : 40560 hPa
Relative vapor density at 20 °C : 3.52 (20 °C)

Relative density : 1.2 (-27 °C)

Density : 1206 kg/m³ (-27 °C)
Solubility : Poorly soluble in water. Soluble in ethanol. Soluble in ether. Soluble in hexane.
Water: 0.15 g/100ml (25 °C)

Log Pow	: 1.06 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

VOC content	: 0 %
Gas group	: Compressed gas
Other properties	: Gas/vapor heavier than air at 20°C. Substance has neutral reaction. May generate electrostatic charges.

SECTION 10: Stability and Reactivity

10.1. Reactivity

On burning: release of toxic and corrosive gases/vapours (hydrofluoric acid, carbon monoxide - carbon dioxide, carbonylfluoride). Reacts with (some) acids.

10.2.

Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5.

Incompatible materials Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity	: Not classified

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LC50 inhalation rat (mg/l)	> 2000 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	> 359300 ppm/4h (Rat)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified based on available data, the classification criteria are not met
Carcinogenicity	: Not classified

Reproductive toxicity : Not classified based on available data, the classification criteria are not met Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated : Not classified based on available data, the classification criteria are not met exposure)

Aspiration hazard	: Not classified based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Accelerated heart action. Disturbances of heart rate. Coordination disorders. Feeling of weakness. Respiratory difficulties. Vomiting. Nausea. Disturbances of consciousness. Risk of lung oedema. Respiratory collapse.
Symptoms/injuries after skin contact	: Red skin. Blisters. Frostbites.
Symptoms/injuries after eye contact	: Not applicable.
Symptoms/injuries after ingestion	: Not applicable.
Chronic symptoms	: No effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: No environmental hazard.
Ecology - air	: TA-LuftKlasse 5.2.5.
Ecology - water	: Mild water pollutant (surface water). Maximum concentration in drinking water: 1.5 mg/l (fluoride) (Directive 98/83/EC). Slightly harmful to fishes (LC50(96h) 100-1000 mg/l). Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l).

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LC50 fish 1	450 mg/l 96 h; Salmogairdneri (Oncorhynchusmykiss)
EC50 Daphnia 1	980 mg/l (48 h; Daphnia magna)

12.2. Persistence and degradability

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Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

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BCF other aquatic organisms 1	5 - 58 (Estimated value)
Log Pow	1.06 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Refer to manufacturer/supplier for information on recovery/ recycling.

Additional information : LWCA (the Netherlands): KGA category 06. Hazardous waste according to Directive 2008/98/EC.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

US DOT (ground): UN3159, 1,1,1,2-Tetrafluoroethane, 2.2, Limited Quantity

ICAO/IATA (air): UN3159, 1,1,1,2-Tetrafluoroethane, 2.2, Limited Quantity

IMO/IMDG (water): UN3159, 1,1,1,2-Tetrafluoroethane, 2, Limited Quantity

Special Provisions: DOT-SP 10232: In accordance with this special permit, the product container is marked with DOT-SP10232 instead of 2Q. This packaging is approved for shipping as a Consumer Commodity.

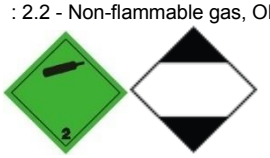
DOT-SP 15146: In accordance with this special permit, the product container is marked with DOT-SP15146 instead of 2Q. This packaging is approved for shipping as a Consumer Commodity.

14.2. UN proper shipping name

DOT Proper Shipping Name : 1,1,1,2-Tetrafluoroethane

Department of Transportation (DOT) Hazard Classes : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115

Hazard labels (DOT) : 2.2 - Non-flammable gas, ORM-D



DOT Special Provisions (49 CFR 172.102) : DOT-SP 10232: In accordance with this special permit, the product container is marked with DOT-SP10232 instead of 2Q. This packaging is approved for shipping as a Consumer Commodity.

: DOT-SP 15146: In accordance with this special permit, the product container is marked with DOT-SP15146 instead of 2Q. This packaging is approved for shipping as a Consumer Commodity.

Transportation Canada : TC-SU 11282

DOT Packaging Exceptions (49 CFR 173.xxx) : 306

DOT Packaging Non Bulk (49 CFR 173.xxx) : 304

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

14.3. Additional information

Other information : No supplementary information available.

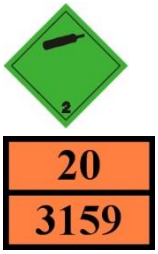
State during transport (ADR-RID) : as liquefied gas, under pressure.

Overland transport

Class (ADR) : 2 - Gases

Hazard identification number (Kemler No.) : 20

Classification code (ADR) : 2A



Danger labels (ADR) : 2.2 - Non-flammable compressed gas

Orange plates

:

Tunnel restriction code : C/E

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.

EmS-No. (1) : F-C

EmS-No. (2) : S-V

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): 75 kg

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg

SECTION 15: Regulatory information

15.1. US Federal regulations

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Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes Sudden release of pressure hazard

15.2. International regulations

CANADA

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WHMIS Classification Class A - Compressed Gas

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Press. Gas

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Indication of changes : Revision - See : *.

Other information : None.

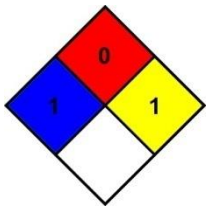
Full text of H-phrases: see section 16:

Compressed gas	Gases under pressure Compressed gas
H280	Contains gas under pressure; may explode if heated

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard

Physical : 1 Slight Hazard

Personal Protection : B