1 Identification

GHS Product Identifier

Product Form:	Aerosol
Trade Name:	Seasense Marine/Sports Horn
Product Numbers:	50074008, 50074035, 50074041, 50074080

Recommended use of the chemical and restriction on use

Use of the substance/mixture:	Hand held signaling device; Safety Horn

Supplier's details

Donovan Marine, Inc./SeaSense Division
4488 112th Street
Urbandale, IA 50322 USA

Tel.:800-282-8725

Emergency phone number

CHEMTREC 24 Hour Emergency Response
USA & Canada 800-424-9300

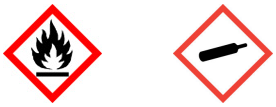
2 Hazard(s) identification

Classification of the substance or mixture

Flammable Gases, 1, H223
Gases Under Pressure - Liquefied Gas, H280

GHS label elements

Danger



Flammable gas

Contains gas under pressure; may explode if heated

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

In case of leakage, eliminate all ignition sources.

Protect from sunlight. Store in a well-ventilated place.

Do not expose to temperatures exceeding 50 °C/ 122 °F.

Other hazards which do not result in classification

N/A

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements above. The labeling above applies to industrial/professional products.

3 Composition/information on ingredients

Description	CAS Number	EINECS Number	%	Note
1,1-Difluoroethane, liquefied, under pressure	75-37-6	200-866-1	100	

4 First-aid measures

Description of necessary first-aid measures

Eye Contact: For liquid contact, irrigate with running water for minimum of 15 minutes. Seek medical attention.

Skin Contact: For liquid contact, warm areas gradually and get medical attention if there is evidence of frosy bite or tissue damage. Flush area with lukewarm water. Do not rub affected area. If blistering occurs, apply a sterile dressing. Seek medical attention.

Inhalation: Remove to fresh air. Artificial respiration and/or oxygem may be necessary. Consult a physician.

Ingestion: This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Most important symptoms/effects, acute and delayed

Acute: Anesthetic effect at high concentrations.

Delayed: None known or anticipated. See Section 11 for information on effects from chronic exposure, if any.

Indication of immediate medical attention and special treatment needed, if necessary

Note to Physician: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

5 Fire-fighting measures

Suitable extinguishing media

Suitable Extinguishing Media

Water spray, Water mist, Foam, Dry chemical or Carbon Dioxide. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Procedures

For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done safely. Stay away from ends of container. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely.

Specific hazards arising from the chemical

Unusual Fire and Explosion Hazards

Extremely flammable. Contents under pressure. This material can be ignited by heat, sparks, flames, or other sources of

ignition. The vapor is heavier than air. Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Drains can be plugged and valves made inoperable by the formation of ice if rapid evaporation of large quantities of the liquefied gas occurs. Do not allow run-off from fire fighting to enter drains or water courses – may cause explosion hazard in drains and may reignite.

Hazardous Combustion Products
Combustion may yield smoke, carbon monoxide, hydrogen fluoride, fluorinated compounds, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits.

Special protective actions for fire-fighters

NPCA - HMIS RATINGS

HEALTH	1
FLAMMABILITY	4
REACTIVITY	1
PERSONAL PROTECTION	-

(Personal Protection Information To Be Supplied By The User)

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Extremely flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Beware of accumulation of gas in low areas or contained areas, where explosive concentrations may occur. Prevent from entering drains or any place where accumulation may occur. Ventilate area and allow to evaporate. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental precautions

Stop spill/release if it can be done safely. Water spray may be useful in minimizing or dispersing vapors. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

Methods and materials for containment and cleaning up

Steps To Be Taken If Material Is Released or Spilled
Avoid sources of ignition - ventilate area. Use water fog to evaporate or ventilate. Protect body against contact with liquid. If confined space - use self contained breathing apparatus. Consult local fire authorities.

Methods for Containment and Clean-Up
Notify relevant authorities in accordance with all applicable regulations. Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

7 Handling and storage

Precautions for safe handling

Comply with state and local regulations. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Keep away from heat or sources of ignition. Prohibit smoking in areas of storage or use. Take precautionary measures against static discharge. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Contents are under pressure. Gases can accumulate in confined spaces and limit oxygen available for breathing. Use only with adequate ventilation. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146.

Conditions for safe storage, including any incompatibilities

Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. Avoid exposing any part of a compressed-gas cylinder to temperatures above 125F (51.6C). Gas cylinders should be stored outdoors or in well ventilated storerooms at no lower than ground level and should be quickly removable in an emergency.

8 Exposure controls/personal protection

Control parameters

Exposure Limits

Component	ACIGH TLV (TWA)	ACIGH TLV (STEL)	OSHA PEL (TWA)	OTHER PEL
1,1 Difluoroethane				1000 ppm Dupont AEL

Appropriate engineering controls

If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Individual protection measures

Eye/Face Protection:	The use of eye protection (such as splash goggles) that meets or exceeds ANSI Z.87.1 is recommended when there is potential liquid contact to the eye. Depending on conditions of use, a face shield may be necessary.
Skin Protection:	Impervious, insulated gloves recommended.
Respiratory Protection:	A NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used in situations of oxygen deficiency (oxygen content less than 19.5 percent), unknown exposure concentrations, or situations that are immediately dangerous to life or health (IDLH). A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9 Physical and chemical properties

Physical and chemical properties

Appearance & Odor:	Clear, colorless liquefied gas with a slight ethereal odor.
Odor Threshold:	No Data
pH:	Not Applicable
Melting / Freezing Point:	No Data
Initial Boiling Point / Range:	-13 °F
Flash Point (Method):	-58 °F (Estimated)
Evaporation Rate:	> 1 (Ethyl Ether = 1.0)
Lower Expolsion Limit:	3.9% (vol.) Gas in air
Upper Explosion Limit:	16.6% (vol.) Gas in air
Vapor Pressure @ 70 °F:	62.5 PSIG
Vapor Density (air = 1.00):	2.4
Specific Gravity (H2O = 1.00):	0.909
Solubility in Water @ 70 °F:	0.28%
Percent Volatile by Volume:	100%
Auto-ignition temperature:	849 °F
Decomposition Data:	No Data
Viscosity:	No Data

10 Stability and reactivity

Chemical stability

Stable

Possibility of hazardous reactions

Can not occur

Conditions to avoid

High heat, spark, and open flames

Incompatible materials

Alkali or Alkaline Earth Metals. Powdered Metal. Powdered Metal Salts.

Hazardous decomposition products

Carbon oxides, Hydrogen fluoride, Carbonyl fluoride, Fluorocarbons.

11 Toxicological information

Toxicological (health) effects

Effects of Over Exposure

Ingestion:	Aspiration hazard!
Inhalation:	Inhalation of vapor may produce anesthetic effects and feeling of euphoria. Prolonged overexposure can cause rapid breathing, headache, dizziness, narcosis, unconsciousness, and death from asphyxiation, depending on concentration and time of exposure.
Skin Contact:	Contact with evaporating liquid can cause frostbite.
Eye Contact:	Liquid can cause severe irritation, redness, tearing, blurred vision, and possible freeze burns.

Delayed and immediate effects and also chronic effects from short and long term exposure

Specific Target Organ Toxicity (Single Exposure):	Not expected to cause organ effects from single exposure.
Specific Target Organ Toxicity (Repeated Exposure):	Not expected to cause organ effects from repeated exposure.
Carcinogenicity:	Not expected to cause cancer. This substance is not listed as a carcinogen by IARC, NTP or OSHA.
Germ Cell Mutagenicity:	Not expected to cause heritable genetic effects.
Reproductive Toxicity:	Not expected to cause reproductive toxicity.

Interactive effects

1,1 Difluoroethane

Inhalation:	No observed adverse effects were noted in rats exposed to concentrations of 152a of 24994 ppm.
Carcinogenicity:	Animal testing did not show any carcinogenic effects.
Reproductive toxicity:	Did not show mutagenic or teratogenic effects in animal experiments.

Other information

High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus.

12 Ecological information

Toxicity

152a has low acute inhalation toxicity, with a 4-hour rat approximate lethal concentration (ALC) of 383,000ppm. No valid acute oral toxicity studies are available. Although no standard test results are available, the repeat dose studies show some potential for irritation.

As with most HFCs, 152a has the potential to produce cardiac sensitization in dogs challenged simultaneously with high exposure concentrations and high doses of exogenous epinephrine. Marked responses, which included a cardiac arrhythmia were observed in 3 of 12 dogs at 150,000 ppm. No response was observed at 50,000 ppm. No sensitization studies were available.

HFC-152a has low repeated dose toxicity. HFC-152a had anesthetic properties at a 100,000 ppm exposure level during a 2-week repeated dose inhalation study in rats. No other clinical, haematological, blood chemistry or histopathology effects were observed during the 2-week inhalation study. No adverse effects were observed in rats following a 3-month inhalation exposure to 25,000 ppm 152a.

152a was not mutagenic in the in vitro bacterial reverse mutation test (Ames test) in Salmonella typhimurium and Escherichia coli strains.

In a 2-year bioassay, 152a was not carcinogenic to rats at inhalation exposure levels up to 25,000 ppm. In a developmental study, female rats were exposed via inhalation up to 50,000 ppm during days 6 to 15 of pregnancy for 6 hours per day. No compound related maternal and developmental effects were observed at any of the concentrations tested, hence, the NOEL is 50,000 ppm. No histopathological or weight effects on reproductive organs were observed in male and female rats exposed up to 25,000 ppm HFC-152a for 6 hours per day, 5 days per week for 3, 12 or 24 months.

Toxicity to fish

1,1 Difluoroethane:	LC50 / 96 h / Fish (unspecified species): 295,783 mg/l

Toxicity to aquatic invertebrates

1,1 Difluoroethane:	EC50 / 48 h / Daphnia: 146,695 mg/l

Persistence and degradability

On the basis of its physical properties 152a may be expected, when released to the environment, to partition almost exclusively into the atmosphere as it is a gas, with a vapor pressure at 25°C of 6065.2 hPa, and it has a water solubility of 2.671 g/l at 25°C. Any 152a, which might be present in aqueous waste streams discharged directly into rivers or lakes would be expected, by analogy with similar compounds, to have a halflife with respect to volatilization of days or at the very most a few weeks. 152a is expected to exist solely in the vapor-phase in the ambient atmosphere.

Vapor-phase 152a is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with a lifetime of 1.4 years. The atmospheric lifetime of this chemical suggests that it will mix throughout the troposphere with a globally averaged concentration in 2003 of about 2.6 ppt. Because of its IR absorption, it will contribute a very small amount to climate change with a global warming potential (GWP) relative to CO2 of <140 for a time horizon of 100 years.

Bioaccumulative potential

ot expected as having the potential to bioaccumulate.

Mobility in soil

Due to the extreme volatility of liquefied gases, air is the only environmental compartment in which they will be found.

1,1 Difluoroethane:	Koc: 4,47

Other adverse effects

None anticipated.

1,1 Difluoroethane: GWP: 124

13 Disposal considerations

Disposal methods

Contain the spill. Eliminate sources of ignition. Use water spray to reduce vapors. For small spills, take up with absorbent material. If confined space - use self contained breathing apparatus. Consult local fire authorities.

Waste Disposal

Reclaim by distillation, incinerate, or remove to a permitted waste facility.

** Comply With All State and Local Regulations **

14 Transport information

UN Number

UN1030

UN Proper Shipping Name

1,1 Difluoroethane

Transport hazard class(es)

2.1

Packaging Exceptions	The manufacturer has been granted a DOT special permit. A copy of DOT Special PermitSP-11516 can be obtained by calling the supplier.

15 Regulatory information

Safety, health and environmental regulations specific for the product in question

Chemical Inventories

USA TSCA:	All components of this product are listed on the TSCA Inventory.
Europe Einecs:	All components in this product are listed on EINECS
Canada Domestic Substances List (DSL):	This product and/or all of its components are listed on the Canadian DSL.
Australia AICS:	All components of this product are listed on AICS.
Korea ECL:	All components in this product are listed on the Korean Existing Chemicals Inventory (KECI).
Japan Miti (ENCS):	All components of this product are listed on MITI.

SARA Title III:

CERCLA/SARA (Section 302) Extremely Hazardous Substances and TPQs (in pounds):	This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

SARA (311, 312) Hazard Class:

Acute Health:	Yes
Chronic Health:	No
Fire Hazard:	Yes
Pressure Hazard:	Yes
California Proposition 65:	WARNING: This product can expose you to chemicals including Lead which is known to the state of California to cause birth defects, reproductive harm and cancer. For more information go to www.P65Warnings.ca.gov

16 Other information

Other information

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, the manufacturer/distributor of this product does not guarantee their accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage may be required. The manufacturer/distributor assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.