1. Identification of the substance / preparation and company / undertaking

Product name ShieldMe Duster

REACH registration number 01-2119474440-43-0000

Company
ShieldMe Products
8551 East Anderson Ave
Suite 108
Scottsdale, AZ, 85255
Email: info@kleen-concepts.com

Emergency phone number ChemTrec 1-800-424-9300 (24 hour)

Use of the substance/Mixture Propellant
ES 1 – Formulation, blending, re-packaging – industrial use
ES 2 – Propellant – industrial use
ES 4 – Propellant (incl. one component foam) – professional use
ES 5 – Propellant/one component foam – consumer use

2. Hazards identification

EC Classification of the substance or mixture

Hazard Class & category code:
Regulation (EC) No. 1272/2008 (CLP):

- **Physical hazards** Flammable gases - Category 1 – Extremely flammable gas (H220)
  Gases under pressure - Contains gas under pressure; may explode if heated (H280)

Classification EC67/548 or EC 1999/45 : R12 – Extremely flammable.

Label Elements

Labeling Regulation EC 1272/2008 (CLP)

- **Hazard pictogram(s)**

GHS02

GHS04

- **Hazard pictograms code** GHS02 (Flame) - GHS04 (Gas cylinder).
- **Signal word** Danger
- **Hazard statements** H220 : Extremely flammable gas.
  H280 : Contains gas under pressure; may explode if heated.
  Contains fluorinated greenhouse gas covered by the Kyoto Protocol

- **Precautionary statements**
  -Prevention P210 : Keep away from heat/sparks/open flames/hot surfaces - No smoking.

  -Response P377 : Leaking gas fire : Do not extinguish unless leak can be stopped safely.
  P381 : Eliminate all ignition sources if safe to do so.

2. Hazards identification continued

-Response

P377 : Leaking gas fire : Do not extinguish unless leak can be stopped safely.
P381 : Eliminate all ignition sources if safe to do so.

-Storage

P403 : Store in a well ventilated place.
P410 : Protect from sunlight.

Labeling EC 67/548 or EC 1999/45

Symbol(s)

F+ : Extremely flammable.

R Phrase(s)

R12 : Extremely flammable.

S Safety phrase(s)

S9 : Keep container in a well-ventilated place.
S16 : Keep away from sources of ignition.

Other hazards

This substance is not considered to be persistent, bio-accumulating nor toxic (PBT).
This substance is not considered to be very persistent, nor very bio-accumulating nor toxic (vPvB).
Rapid evaporation of the liquid may cause frostbite.
Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.
May cause cardiac arrhythmia.

3. Composition / information on ingredients

Substance /Preparation Substance.

Chemical name. 1,1-Difluoroethane.

Chemical formula CH3CHF2

Substance name	Contents	CAS no.	EC No	Registration no.	Classification according to Directive 67/548/EEC	Classification according to Regulation 1272/2008 (CLP)
1,1-Difluoroethane	100%	75-37-6	200-86	01-2119474440-43	F+; R12	Flam. Gas; H220 Press. Gas; H280

Mixtures

Not applicable

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

4. First aid measures

Inhalation

Remove patient from exposure, keep warm and at rest. Administer oxygen if necessary. Apply artificial respiration if breathing has ceased or shows signs of failing. Obtain immediate medical attention.

4.First aid measures continued

Skin contact	Thaw affected areas with water. Remove contaminated clothing. Caution: clothing may adhere to the skin in the case of freeze burns. After contact with skin, wash immediately with plenty of warm water. If irritation or blistering occurs obtain medical attention.
Eye contact	Hold eyelids apart and immediately irrigate with eyewash solution or clean water, for at least 15 minutes. Obtain immediate medical attention.
Ingestion	Unlikely route of exposure. Do not induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300ml (half a pint) of water to drink. Obtain immediate medical attention.
Most important symptoms and effects both acute and delayed.	Skin contact may produce the following symptoms : Frostbite Inhalation may produce the following symptoms : Shortness of breath, dizziness, weakness, nausea, headache, narcosis, irregular cardiac activity.
Indication of any immediate medical attention and special treatment needed	Do not give adrenaline or similar drugs.

5.Fire-fighting measures

Specific hazards	Exposure to fire may cause containers to rupture/explode. Hazardous combustion products: hydrogen fluoride, fluorinated compounds
Hazardous combustion products	Incomplete combustion may form carbon monoxide.
Extinguishing media **-Suitable extinguishing media** **Specific methods**	Water spray, water mist, foam, dry chemical, carbon dioxide (CO_2). If possible, stop flow of product. Move away from the container and cool with water from a protected position. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Special protective equipment for fire fighters	In confined space use self-contained breathing apparatus. Use persona protective equipment. Wear neoprene gloves during cleaning up work after a fire. Exposure to decomposition products may be hazardous to health.
Further information	Use fire extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers/tanks with water spray.

6.Accidental release measures

Personal precautions	Evacuate personnel to safe areas. Ventilate area.. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	Should not be released into the environment.
Clean up measures	Evaporates.

7.Handling and storage

Precautions for safe handling

Advice for safe handling

Avoid breathing vapors or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8. See Annex – Section 2.2

Advice on protection against fire and explosion

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. The products should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. No sparking tools should be used. Take measures to prevent the build of electrostatic charge. Keep away from heat and sources of ignition. Keep away from open flames., hot surfaces and sources of ignition. When using do not smoke.
Avoid breathing vapors or mist. Avoid contact with skin, eyes and clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and Containers

Keep containers tightly closed in a cool, well ventilated place.
Store in original container.

Advice on common storage

No materials to be especially mentioned.

Storage temperature

< 52°C

Specific end uses

No data available.

8.Exposure controls / personal protection

Control parameters

Derived No Effect Level

- 1,1-Difluoroethane

Type of Application (Use): Workers exposure routes: Inhalation Health effect: Chronic effects, systemic toxicity value: 2713mg/m^3

Type of Application (Use): Consumers exposure routes: Inhalation health effect: Chronic effects, systemic toxicity value: 675mg/m^3

Predicted No Effect Concentration

- 1,1-Difluoroethane

Value: 0,048 mg/l
Compartment: Fresh water

Value: 0,0048 mg/l
Compartment: Marine water

Value: 0.48 mg/l
Compartment: Water
Remarks: Intermittent use/release

Value: 0,19 mg/l
Compartment: Fresh water sediment

Value: 0,019 mg/l
Compartment: Marine sediment

8. Exposure controls / personal protection continued

Value: 0,141 mg/l
Compartment: Soil

Personal protection

Wear suitable protective clothing, gloves and eye/face protection. Wear thermal insulating gloves when handling liquefied gases. In cases of insufficient ventilation, where exposure to high concentrations of vapour is possible, suitable respiratory protective equipment with positive air supply should be used. Do not smoke while handling product.

Safety glasses. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Heat insulating gloves

9. Physical and chemical properties

Form	Liquefied gas
Color	Clear, colorless
Odor	Slight ether-like.
Molecular weight [g/mol]	66.05
Solubility in water [g/l]	3.2 at 21°C at 1013 hPa
Boiling point (°C)	-24.7 at 1013 hPa
Freezing point/ (°C)	-117 at 1013 hPa
Density	0,0027g/cm^3 at 25°C (1013 hPa)
Vapor pressure (25°C)	5146,24 hPa
Lower flammability limit [vol% in air]	4.32
Upper flammability limit [vol% in air]	17.35
Auto ignition temperature [°C]	440
Partition coefficient: n-octanol/water	POW 1,13 at 25°C
Other data	No data available.

10. Stability and reactivity

Reactivity

Extremely flammable gas.

Chemical Stability

The product is chemically stable

Possibility of hazardous reactions

Vapors may form explosive mixture with air.

Conditions to avoid

Temperatures > 52°C

Incompatible materials

Incompatible products Alkali metals and Alkaline earth metals, powdered metals and powdered metal salts..

Hazardous decomposition products

Hazardous thermal decomposition products may include: Carbon oxides, Hydrogen Fluoride, Carbonyl Fluoride, Fluorocarbons.

11. Toxicological information

Information on toxicological effects

Acute oral toxicity

Acute inhalation toxicity

- 1,1-Difluoroethane — LC50/rat: 437 500 ppm

/ dog
Cardiac sensitization.

Skin irritation

- 1,1-Difluoroethane — Not tested on animals.
Classification: Not classified as irritant.
Result: No skin irritation.
Not expected to cause skin irritation based on expert review of the properties of the substance.

Eye irritation

- 1,1-Difluoroethane — Not tested on animals.
Classification: Not classified as irritant.
Result: No eye irritation.
Not expected to cause eye irritation based on expert review of the properties of the substance.

Sensitization

- 1,1-Difluoroethane — Not tested on animals.
Classification: Not classified as skin sensitizer.
Result: Does not cause skin sensitization.
Not expected to cause sensitization based on expert review of the properties of the substance.

Repeated dose toxicity

- 1,1-Difluoroethane — Inhalation rat: No toxicologically significant effects were found.

Mutagenicity assessment

- 1,1-Difluoroethane — Animal testing did not show mutagenic effects.

Carcinogenicity assessment

- 1,1-Difluoroethane — Animal testing did not show any carcinogenic effects.

Toxicity to reproduction assessment

- 1,1-Difluoroethane — No data available.

Human Experience — Excessive exposures may affect human health, as follows:

Inhalation – Severe shortness of breath, narcosis, irregular cardiac activity.

Further information — May cause cardiac arrhythmia. Rapid evaporation of the liquid may cause frostbite.

12. Ecological information

Toxicity

Toxicity to fish

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

Toxicity to aquatic invertebrates

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

Persistence and degradability

No data available.

Bio-accumulative potential

Bioaccumulation No data available.

Mobility in soil

Mobility in soil Koc: 4,47

Results of PBT and vPvB assessment

PBT and vPvB assesment This substance is not considered to be persistent, bio-accumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bio accumulating (vPvB).

Other adverse effects

Ozone depletion potential 0

Global warming potential (GWP) 124

13. Disposal information

Waste treatment methods

Product Can be used after re-conditioning. See Annex – Section 2.1

Contaminated packaging Empty pressure vessels should be returned to the supplier.

14. Transport information

UN No. 1030

Labelling ADR, IMDG, IATA

2.1: flammable gas

Land transport

ADR

Class	2
Classification code	2F
H.I.nr	23
UN No.	1030
UN Proper shipping name	1,1-Difluoroethane
Labelling No.	2.1
Tunnel instructions	(B/D)

14. Transport information continued

Sea transport

IMDG code

Proper shipping name	1,1-Difluoroethane
Class	2.1
UN No.	1030
Labeling No.	2.1

Air transport

IATA_C

-Proper shipping name	1,1-Difluoroethane
Class	2.1
UN No.	1030
Labeling No.	2.1

Further information ICAO/IATA cargo aircraft only.

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture No data available.

Chemical safety Assessment A chemical Safety Assessment has been carried out for this substance.

16. Other information

Text of R-phrases mentioned in Section 3 R12 Extremely flammable

Full text of H-Statements referred to Under Section 3
H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.

16. Other information continued

Further information

Before use read ShieldMe's safety information.

This datasheet was prepared in accordance with Regulation (EC) No. 1907/2006.

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