

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

Revision date: 07/06/2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Trade name : DG 100 8 oz, DG 100 10 oz, DG 100 12 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 Duster

1.3. Details of the supplier of the safety data sheet

CHARLES BESELER COMPANY
P.O. BOX 431
STROUDBURG
PA 18360
T 800-237-3537

1.4. Emergency telephone number

Emergency number : CHEMTREC 24 Hour 1-800-424-9300

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)

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

| Name | Product identifier | % | Classification (GHS-US) |
|---|--------------------|------|-------------------------|
| 1,1,1,2-tetrafluoroethane (Main constituent) | (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: Firefighting measures

5.1. Extinguishing media

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

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

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 naked flames/heat.: 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.

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

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| 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 Critical temperature | : Not applicable |
| | : 101 °C |

07/06/2016

4/10

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

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|---------------------------------|--|
| 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/m ³ (-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, carbonyl fluoride). 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

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

11.1. Information on toxicological effects

Acute toxicity : Not classified

| 134a (811-97-2) | |
|----------------------------|-----------------------|
| 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 exposure) : Not classified based on available data, the classification criteria are not met

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).

| 134a (811-97-2) | |
|-----------------|--|
| 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

134a (811-97-2)

Persistence and degradability : Not readily biodegradable in water.

12.3. Bioaccumulative potential

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

134a (811-97-2)

| | |
|-------------------------------|--|
| 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

UN3159, 1,1,1,2-Tetrafluoroethane, 2.2, Limited Quantity

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



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

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

14.3. Additional information

Other information : No supplementary information available.

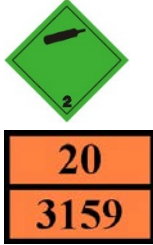
State during transport (ADR-RID) : as liquefied gas, under pressure.

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: 75 kg
(49 CFR 173.27)

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

SECTION 15: Regulatory information

15.1. US Federal regulations

134a (811-97-2)

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

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

CANADA

134a (811-97-2)

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.

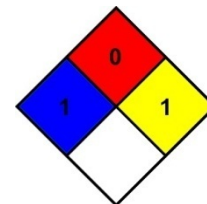
Full text of H-phrases: see section 16:

| | |
|----------------|--|
| 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

07/06/2016

DG 100

Safety Data Sheet

According to Federal Register Rules and Regulations

Personal Protection : B

The Supplier identified in Section 1 of this MSDS has evaluated this product and certifies it to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission, and where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No other testing is required to certify compliance with the above. The date of manufacture is stamped on the product