

Material Safety Data Sheet



Aerosol Duster, Part Number 8500-6460

1. Product and company identification

Product name	: Aerosol Duster, Part Number 8500-6460
Material uses	: Analytical chemistry. 330 ml.
Supplier/Manufacturer	: Agilent Technologies, Inc. Logistics Center - Americas 500 Ships Landing Way New Castle, Delaware 19720
Part No.	: 8500-6460
Validation date	: 07/12/2010
<u>In case of emergency</u>	: 1-302-633-8777 1-877-4 Agilent (Information Telephone Number)

2. Hazards identification

Physical state	: Gas. [Liquefied gas. Clear.]
Odor	: Ethereal. [Slight]
<u>Emergency overview</u>	
Signal word	: CAUTION!
Hazard statements	: NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
Precautions	: No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
Routes of entry	: Inhalation.
<u>Potential acute health effects</u>	
Inhalation	: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	: Ingestion of liquid can cause burns similar to frostbite.
Skin	: Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
Eyes	: Liquid can cause burns similar to frostbite.
<u>Potential chronic health effects</u>	
Chronic effects	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Not available.
<u>Over-exposure signs/symptoms</u>	
Inhalation	: No specific data.
Ingestion	: Adverse symptoms may include the following: frostbite
Skin	: Adverse symptoms may include the following: frostbite
Eyes	: Adverse symptoms may include the following: frostbite
Medical conditions aggravated by over-exposure	: None known.

2. Hazards identification

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Norflurane	811-97-2	60 - 100

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact with liquid, warm frozen tissues slowly with lukewarm water. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : As this product rapidly becomes a gas when released, refer to the inhalation section.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

- Flammability of the product** : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
carbonyl halides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Emits toxic fumes when heated to decomposition. May be combustible.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Immediately contact emergency personnel. Stop leak if without risk.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Keep container tightly closed and sealed until ready for use.

8. Exposure controls/personal protection

<u>Occupational exposure limits</u>		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	Notations
Norflurane	US AIHA 1/2009	1000	-	-	-	-	-	-	-	-	

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

8. Exposure controls/personal protection

- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Other protection** : Not available.

9. Physical and chemical properties

- Physical state** : Gas. [Liquefied gas. Clear.]
- Flash point** : Not available.
- Auto-ignition temperature** : >743°C (>1369.4°F)
- Flammable limits** : Not available.
- Color** : Colorless.
- Odor** : Ethereal. [Slight]
- pH** : Not available.
- Boiling/condensation point** : -26.5°C (-15.7°F)
- Melting/freezing point** : -101°C (-149.8°F)
- Critical temperature** : 101.05°C (213.9°F)
- Specific gravity** : Not available.
- Vapor pressure** : 630.6 kPa (4730 mm Hg)
- Vapor density** : Not available.
- Odor threshold** : Not available.
- Evaporation rate** : Not available.
- Viscosity** : Dynamic: 0.204 mPa·s (0.204 cP)

10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : No specific data.
- Materials to avoid** : Reactive or incompatible with the following materials: metals.
Incompatible with : Chlorine.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Norflurane	LC50 Inhalation Vapor	Rat	1500 g/m ³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

11. Toxicological information

Conclusion/Summary	: Not available.
Mutagenicity	
Conclusion/Summary	: Not available.
Teratogenicity	
Conclusion/Summary	: Not available.
Reproductive toxicity	
Conclusion/Summary	: Not available.
Synergistic products	: Not available.
Other adverse symptoms	: Adverse symptoms may include the following: kidney abnormalities, liver abnormalities, pulmonary chronic lung disease. (high concentrations)

12. Ecological information

Ecotoxicity : This product shows a low bioaccumulation potential.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Norflurane	Acute EC50 980 mg/l Acute LC50 450 mg/l	Daphnia Fish	48 hours 96 hours

Octanol/water partition coefficient : 1.06

Other adverse effects : No known significant effects or critical hazards.

13. Disposal considerations


Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Do not puncture or incinerate container. Empty pressure vessels should be returned to the supplier.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.



The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG	UN3159	REFRIGERANT GAS R 134a	2.2	-		Explosive Limit and Limited Quantity Index 0.12 Passenger Carrying Road or Rail Index 75

14. Transport information

IMDG	UN3159	REFRIGERANT GAS R 134a	2.2	-		Emergency schedules (EmS) F-C, S-V
IATA	UN3159	Refrigerant gas R 134a	2.2	-		Passenger and Cargo Aircraft Quantity limitation: 75 kg Packaging instructions: 200 Cargo Aircraft Only Quantity limitation: 150 kg Packaging instructions: 200 Remarks Requires Shipper's Declaration of Dangerous Goods

PG* : Packing group

15. Regulatory information

WHMIS (Canada) : Class A: Compressed gas.

Canadian lists

Canadian NPRI : This material is listed.

CEPA Toxic substances : This material is listed.

Canada inventory : This material is listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. Other information

Label requirements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

Date of issue : 07/12/2010

Date of previous issue : No previous validation.

Version : 1

 Indicates information that has changed from previously issued version.

Notice to reader

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