

Agilent Technologies Australia Pty Ltd
347 Burwood Highway
Forest Hill
Victoria 3131, Australia
1800 802 402

HFBA

1 . Identification of the material and supplier

Names

Product name : HFBA
Part No. : CP8242
ADG : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Heptafluorobutyric anhydride)

Supplier

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
347 Burwood Highway
Forest Hill
Victoria 3131, Australia
1800 802 402

Emergency telephone number : Chemtrec: +(61)-290372994

Uses

Area of application : Industrial applications, Professional applications.
Material uses : Analytical chemistry.
1g x 10

2 . Hazards identification

Classification : C; R34
Risk phrases : R34- Causes burns.
Safety phrases : S23- Do not breathe vapour.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S27/28- After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of [***].
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Statement of hazardous/dangerous nature : HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3 . Composition/information on ingredients

Mixture : No.
Chemical name : Heptafluorobutyric anhydride
CAS number : 336-59-4
Molecular formula : C₈F₁₄O₃

Ingredient name	CAS number	Concentration
Heptafluorobutyric anhydride	336-59-4	>60

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

- Inhalation** : Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Advice to doctor** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

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.
In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
- 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.
- Hazchem code** : 2X

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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilt 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).

6 . Accidental release measures

- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

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. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

- Occupational exposure limits** : **No exposure standard allocated.**
- 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.
- Exposure controls**
- Engineering measures** : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants 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.
- 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.
- 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.
- 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.
- 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.

9 . Physical and chemical properties

Physical state	: Liquid. [Clear.]
Colour	: Colourless.
Odour	: Pungent. Stench. Sharp.
Boiling point	: 108 to 109°C (226.4 to 228.2°F)
Melting point	: -43°C (-45.4°F)
Vapour pressure	: Not available.
Relative density	: 1.653 [Water = 1]
Flash point	: Not available.
Flammable limits	: Not available.
Vapour density	: 1.612 [Air = 1]
pH	: Not available.
Auto-ignition temperature	: Not available.
Solubility	: Soluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Keep away from heat.
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials, reducing materials, metals, acids, alkalis and moisture. Hydrogen fluoride (HF).
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Potential acute health effects

Inhalation	: May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
Ingestion	: May cause burns to mouth, throat and stomach.
Skin contact	: Corrosive to the skin. Causes burns.
Eye contact	: Corrosive to eyes. Causes burns.

Acute toxicity

Conclusion/Summary : Not available.

Potential chronic health effects

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

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.

Over-exposure signs/symptoms

Inhalation	: No specific data.
Ingestion	: Adverse symptoms may include the following: stomach pains
Skin	: Adverse symptoms may include the following: pain or irritation redness blistering may occur

11 . Toxicological information

- Eyes** : Adverse symptoms may include the following:
pain
watering
redness
- Target organs** : May cause damage to the following organs: gastrointestinal tract, upper respiratory tract, skin, eyes.




12 . Ecological information

- Ecotoxicity** : May cause long-term adverse effects in the aquatic environment.
- Other ecological information**
- Other adverse effects** : No known significant effects or critical hazards.

13 . Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. 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. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADG	UN3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Heptafluorobutyric anhydride)	8	II		Hazchem code 2X
IMDG	UN3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Heptafluorobutyric anhydride)	8	II		Emergency schedules (EmS) F-A, S-B
IATA	UN3265	Corrosive liquid, acidic, organic, n.o.s. (Heptafluorobutyric anhydride)	8	II		Passenger and Cargo Aircraft Quantity limitation: 1 L Packaging instructions: 851 Cargo Aircraft Only Quantity limitation: 30 L Packaging instructions: 855 Limited Quantities - Passenger Aircraft Quantity limitation: 0.5 L Packaging instructions: Y840

PG* : Packing group

15 . Regulatory information

Standard for the Uniform Scheduling of Drugs and Poisons

Not regulated.

Control of Scheduled Carcinogenic Substances

<u>Ingredient name</u>	<u>Schedule</u>
No listed substance	

- Australia inventory (AICS)** : This material is listed or exempted.

16 . Other information

Date of issue : 23/05/2012

Date of previous issue : No previous validation.

✔ Indicates information that has changed from previously issued version.

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