

SAFETY DATA SHEET


DuPont™ SUVA® 404A Refrigerant

Version 2.2

Revision Date 04.06.2008

Ref. 13000000494

This SDS adheres to the standards and regulatory requirements of Australia and may not meet the regulatory requirements in other countries.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING
Product information

Trade name : DuPont™ SUVA® 404A Refrigerant
 Types : ASHRAE Refrigerant number designation: R-404A

Use of the Substance/Preparation : Refrigerant
 Company : Du Pont (Australia) Ltd
 7 Eden Park Drive
 Macquarie Park NSW 2113
 Australia

Telephone : (02) 9923 6111
 Telefax : (02) 9923 6011
 Emergency telephone : (02) 9923 6275 (Transport Emergency)
 (24 hr Emergency Medical Information: 1800 674 415)

2. COMPOSITION/INFORMATION ON INGREDIENTS
Components

Chemical Name	CAS-No.	Concentration
1,1,1-Trifluoroethane	420-46-2	52 %
Pentafluoroethane	354-33-6	44 %
1,1,1,2-Tetrafluoroethane	811-97-2	4 %

3. HAZARDS IDENTIFICATION
Hazardous classification

Classified as dangerous goods according to the ADG Code
 Not classified as hazardous according to criteria of NOHSC.

Specific hazards

Rapid evaporation of the liquid may cause frostbite.
 Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

4. FIRST AID MEASURES

General advice : If unconscious, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician.

Inhalation : Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary.

Skin contact : Wash off with warm water. Take off all contaminated clothing immediately.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

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Notes to physician

Treatment : Do not give adrenaline or similar drugs.

5. FIRE-FIGHTING MEASURES

Specific hazards during fire fighting : pressure build-up

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Use 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 the area. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Should not be released into the environment.

Methods for cleaning up : Evaporates.

7. HANDLING AND STORAGE**Handling**

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.

Advice on protection against fire and explosion : No special protective measures against fire required.

Storage

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Store in original container.

Further information on storage conditions : Keep at temperature not exceeding 52°C.

Advice on common storage : No materials to be especially mentioned.

Storage temperature : < 52 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**


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Components	Values	Control parameters	Basis
1,1,1,2-Tetrafluoroethane	TWA	4,240 mg/m3 (1,000 ppm)	AU OEL (2004)

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection	: Half mask with a particle filter conforming to AS1715 & AS1716.
Hand protection	: Heat insulating gloves
Eye protection	: Safety glasses
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: Liquefied gas
Colour	: colourless
Odour	: ether-like
pH	: neutral
Boiling point/boiling range	: -46.7 °C
Flash point	: does not flash
Thermal decomposition	: 728 °C
Vapour pressure	: 12,340 hPa at 25 °C 23,100 hPa at 50 °C
Density	: 1.05 g/cm ³ at 25 °C (as liquid)

10. STABILITY AND REACTIVITY

Conditions to avoid	: The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.
Hazardous decomposition products	: Hydrogen halides, Carbon dioxide (CO ₂), Carbon monoxide, Fluorocarbons, Carbonyl halides


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11. TOXICOLOGICAL INFORMATION

Acute inhalation toxicity

- 1,1,1-Trifluoroethane : LC50/4 h/rat : > 1,856 mg/l
Anaesthetic effects

//dog :
Cardiac sensitization

- Pentafluoroethane : LC50/4 h/mouse : 556329 ppm

- 1,1,1,2-Tetrafluoroethane : ALC/4 h/rat : 567000 ppm
LC50/4 h/rat : 358500 ppm

//dog :
Cardiac sensitization

Skin irritation

- 1,1,1,2-Tetrafluoroethane : non-irritant

Eye irritation

- 1,1,1,2-Tetrafluoroethane : non-irritant

Sensitisation

- 1,1,1,2-Tetrafluoroethane : Not a skin sensitizer.

Repeated dose toxicity

- 1,1,1-Trifluoroethane : Inhalation
No toxicologically significant effects were found.

- Pentafluoroethane : Inhalation rat
No toxicologically significant effects were found.

- 1,1,1,2-Tetrafluoroethane : Inhalation rat
No toxicologically significant effects were found.

Carcinogenicity assessment

: Did not show carcinogenic effects in animal experiments.

Toxicity to reproduction assessment

: Did not show mutagenic or teratogenic effects in animal experiments.

Human experience

: Excessive exposures may affect human health, as follows:

Inhalation: Severe shortness of breath, narcosis, Irregular cardiac activity

Further information

: Rapid evaporation of the liquid may cause frostbite.

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12. ECOLOGICAL INFORMATION

Toxicity to fish

• 1,1,1,2-Tetrafluoroethane : LC50/96 h/Oncorhynchus mykiss (rainbow trout): 450 mg/l

Aquatic toxicity

• 1,1,1,2-Tetrafluoroethane : EC50/48 h/Daphnia magna (Water flea): 980 mg/l

13. DISPOSAL CONSIDERATIONS

Product : Can be used after re-conditioning.

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

Disposable containers: Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

ADG

UN-Number : 3337
Proper shipping name : Refrigerant gas R 404A
Class : 2.2

IMDG

UN-Number : 3337
Proper shipping name : Refrigerant gas R 404A
Class : 2.2
Labelling No. : 2.2
Marine pollutant : no

Further information : Classified as dangerous goods according to the ADG Code

15. REGULATORY INFORMATION

Further information : Not classified as hazardous according to criteria of NOHSC.

National regulatory information

SUSDP : No poison schedule number allocated

16. OTHER INFORMATION

Sources of key data used to compile the Safety Data Sheet:

1. National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003)]

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2. Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(1999)]
3. List of Designated Hazardous Substances [NOHSC:10005(1999)]
4. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]
5. Australian Dangerous Goods Code, No. 6 [National Road Transport Commission]
6. Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP), No. 19 [NDPSC: 2004]
7. National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]

Department:

Du Pont (Australia) Ltd
7 Eden Park Drive
Macquarie Park NSW 2113
Australia

Further information:

Before use read DuPont's safety information., For further information contact the local DuPont office or DuPont's nominated distributors., ® DuPont's registered trademark

Significant change from previous version is denoted with a double bar.

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