

SAFETY DATA SHEET

**SUVA[®] 404A Refrigerant**

Version 2.1

Revision Date 14.11.2004

Ref. 13000000494

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

Trade name : SUVA[®] 404A Refrigerant
Types : ASHRAE Refrigerant number designation: R-404A
Use of the : refrigerant
Substance/Preparation
Company : Du Pont (Australia) Ltd
168 Walker Street
North Sydney NSW 2060
Australia

Telephone : (02) 9923 6111
Telefax : (02) 9923 6011
Emergency telephone : (02) 9963 1301
number

2. COMPOSITION/INFORMATION ON INGREDIENTS**Components**

Chemical Name	CAS-No.	Concentration
1,1,1-Trifluoroethane (R143a)	420-46-2	52 %
Pentafluoroethane (R125)	354-33-6	44 %
1,1,1,2-Tetrafluoroethane (R134a)	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.

Notes to physician

Treatment : Do not give adrenaline or similar drugs.

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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.

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

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

Components	Values	Control parameters	Basis
1,1,1,2-Tetrafluoroethane (R134a)	TWA	4,240 mg/m ³ (1,000 ppm)	NOHSC:1003 (2003)

Engineering measures

Ensure adequate ventilation, especially in confined areas.

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Personal protective equipment

- Respiratory protection : For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
- 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/range : -46.7 °C
- Flash point : does not flash
- Thermal decomposition : 728 °C
- Vapour pressure : 12,340 hPa at 25 °C
- Vapour pressure : 23,100 hPa at 50 °C
- Density : 1.05 g/cm³ 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.
- Materials to avoid : alkali metals, alkaline earth metals, powdered metals, powdered metal salts
- Hazardous decomposition products : hydrogen halides, carbon dioxide (CO₂), Carbon monoxide, fluorocarbons, carbonyl halides

11. TOXICOLOGICAL INFORMATION

- Acute inhalation toxicity
• 1,1,1-Trifluoroethane : LC50/4 h/rat : > 1,855 mg/l
(R143a)

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- Pentafluoroethane (R125) : ALC/4 h/rat : > 3,480 mg/l
- 1,1,1,2-Tetrafluoroethane (R134a) : LC50/4 h/rat : > 2,085 mg/l
- 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.

12. ECOLOGICAL INFORMATION

- Toxicity to fish
 - 1,1,1,2-Tetrafluoroethane (R134a) : LC50/96 h/Oncorhynchus mykiss (rainbow trout): 450 mg/l
- Aquatic toxicity
 - 1,1,1,2-Tetrafluoroethane (R134a) : EC50/48 h/Daphnia: 980 mg/l
- Global warming potential (CO₂ = 1) : 3748

13. DISPOSAL CONSIDERATIONS

- Product : Can be used after re-conditioning.
- Contaminated packaging : Empty pressure vessels should be returned to the supplier.

14. TRANSPORT INFORMATION

- ADG**
- UN-No : 3337
- Description of the goods : Refrigerant gas R 404A
- Class : 2.2
- IMDG**
- Substance No. : 3337
- Description of the goods : Refrigerant gas R 404A
- Class : 2.2
- ADR/RID-Labels : 2.2

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Marine pollutant : no

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

15. REGULATORY INFORMATION

National regulatory information:

SUSDP : No poison schedule number allocated

16. OTHER INFORMATION

Sources of key data used to compile the datasheet:

1. National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003)]
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. 18 [NDPSC:May 2003]
7. National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]

Department:

Du Pont (Australia) Ltd
168 Walker Street
North Sydney NSW 2060
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

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