

**SUVA® 404A Refrigerant**

Version 2.1

Revision Date 13.10.2004

Ref. 130000000494

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.
- German storage class : 2A : Compressed, liquefied or pressurised gas

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

| Components | CAS-No. | Type | Control parameters | Update | Basis |
|-----------------------------------|----------|------|-------------------------|--------|----------|
| 1,1,1,2-Tetrafluoroethane (R134a) | 811-97-2 | TWA | 4 240 mg/m ³ | 2001 | EH40 OES |

Engineering measures

**SUVA® 404A Refrigerant**

Version 2.1

Revision Date 13.10.2004

Ref. 130000000494

Ensure adequate ventilation, especially in confined areas.

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

**SUVA® 404A Refrigerant**

Version 2.1

Revision Date 13.10.2004

Ref. 130000000494

- 1,1,1-Trifluoroethane (R143a) : LC50/4 h/rat : > 1 855 mg/l
- 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/Rainbow trout: 450 mg/l

Aquatic toxicity

- 1,1,1,2-Tetrafluoroethane (R134a) : EC50/48 h/Daphnia: 980 mg/l

Global warming potential : 3 748
(CO₂ = 1)

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION**ADR**

Class: 2
 Classification Code: 2A
 HI No.: 20
 UN-No: 3337
 Labelling No.: 2.2
 Proper shipping name: Refrigerant gas R 404A



SUVA[®] 404A Refrigerant

Version 2.1

Revision Date 13.10.2004

Ref. 130000000494

IATA_C

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

IMDG

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

15. REGULATORY INFORMATION

Labelling according to EC Directives

The product does not need to be labelled in accordance with EC directives or respective national laws.

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2

R12 Extremely flammable.

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.