

**DuPont™ Suva® 95 refrigerant**

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

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

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ Suva® 95 refrigerant
Tradename/Synonym : Suva® 508B
R-508B

Product Grade/Type : ASHRAE Refrigerant number designation: R-508B

Product Use : Refrigerant, For professional users only.

Restrictions on use : Do not use product for anything outside of the above specified uses
Manufacturer/Supplier : DuPont
1007 Market Street
Wilmington, DE 19898
United States of America

Product Information : +1-800-441-7515 (outside the U.S. +1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category
Gases under pressure Liquefied gas

DuPont™ Suva® 95 refrigerant

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

Label content

Pictogram

:



Signal word

: Warning

Hazardous warnings

: Contains gas under pressure; may explode if heated.

Hazardous prevention
measures

: Protect from sunlight. Store in a well-ventilated place.

Other hazards

Misuse or intentional inhalation abuse may lead to death without warning.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Rapid evaporation of the liquid may cause frostbite., May cause cardiac arrhythmia.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Perfluoroethane (FC-116)	76-16-4	54 %
Trifluoromethane (HFC-23)	75-46-7	46 %

**DuPont™ Suva® 95 refrigerant**

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

SECTION 4. FIRST AID MEASURES

- General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
- Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Take off all contaminated clothing immediately. Consult a physician. Wash contaminated clothing before re-use. Treat for frostbite if necessary by gently warming affected area.
- Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician if necessary.
- Ingestion : Is not considered a potential route of exposure.
- Most important symptoms/effects, acute and delayed : Anaesthetic effects Light-headedness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
- Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No applicable data available.
- Specific hazards : Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur.

**DuPont™ Suva® 95 refrigerant**

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear neoprene gloves during cleaning up work after a fire.

Further information : Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : No applicable data available.
Spill Cleanup : Evaporates.

Accidental Release Measures : Avoid open flames and high temperatures.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
Handle in accordance with good industrial hygiene and safety practice.

Handling (Physical Aspects) : No applicable data available.
Dust explosion class : No applicable data available.
Storage : Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.
Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Keep container tightly closed in a dry and well-ventilated place. Store in original container. Protect from contamination.


DuPont™ Suva® 95 refrigerant

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

The product has an indefinite shelf life when stored properly.

Storage period : > 10 yr

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released.

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 : Additional protection: Impervious gloves

Eye protection : Wear safety glasses or coverall chemical splash goggles. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

**Exposure Guidelines
Exposure Limit Values**

Perfluoroethane			
AEL *	(DUPONT)	1,000 ppm	8 & 12 hr. TWA

Trifluoromethane			
AEL *	(DUPONT)	1,000 ppm	8 & 12 hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**DuPont™ Suva® 95 refrigerant**

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

Appearance

Physical state : gaseous
Form : Liquefied gas
Color : colourless

Odor : slight, ether-like

Odor threshold : No applicable data available.

pH : No applicable data available.

Melting point/range : No applicable data available.

Boiling point/boiling range : Boiling point
-87.6 °C (-125.7 °F)

Flash point : does not flash

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : Not applicable

Lower explosion limit : Not applicable

Vapor pressure : 36,568 hPa at 10 °C (50 °F)

Vapor density : 3.2 at 25°C (77°F) and 1013 hPa (Air = 1.0)

Specific gravity (Relative density) : 1.15 at 25 °C (77 °F)

Water solubility : No applicable data available.

Solubility(ies) : No applicable data available.

Partition coefficient: n-octanol/water : No applicable data available.

Auto-ignition temperature : No applicable data available.

Ignition temperature : no data available


DuPont™ Suva® 95 refrigerant

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

Decomposition temperature : No applicable data available.

Viscosity, kinematic : No applicable data available.

Viscosity : No applicable data available.

% Volatile : 100 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Decomposes on heating.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : No applicable data available.

Conditions to avoid : Avoid open flames and high temperatures.
 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.

Incompatible materials : Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts

Hazardous decomposition products : Carbon oxides, Hydrogen fluoride, Carbonyl fluoride

SECTION 11. TOXICOLOGICAL INFORMATION

Perfluoroethane (FC-116)

Inhalation 4 h LC50 : > 500000 ppm , Rat

Inhalation No Observed Adverse Effect Concentration : 200000 ppm , Dog
 Cardiac sensitization

Repeated dose toxicity : Inhalation
 Rat
 - Method: OECD Test Guideline 412
 No toxicologically significant effects were found.

Mutagenicity : Animal testing did not show any mutagenic effects.
 Tests on bacterial or mammalian cell cultures did not show mutagenic effects.


DuPont™ Suva® 95 refrigerant

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

- Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.
- Teratogenicity : Animal testing showed no developmental toxicity.
- Further information : Cardiac sensitisation threshold limit : 1129943.5 mg/m3

Trifluoromethane (HFC-23)

- Inhalation 4 h LC50 : > 663000 ppm , Rat
- Inhalation Low Observed Adverse Effect Concentration (LOAEC) : > 500000 ppm , Dog
Cardiac sensitization
- Inhalation No Observed Adverse Effect Concentration : 500000 ppm , Dog
Cardiac sensitization
- Repeated dose toxicity : Inhalation
Rat
-
NOAEL: 28.634 mg/l
No toxicologically significant effects were found.
- Mutagenicity : Animal testing did not show any mutagenic effects.
Evidence suggests this substance does not cause genetic damage in animals.
- Reproductive toxicity : No toxicity to reproduction
Evidence suggests the substance is not a reproductive toxin in animals.
- Teratogenicity : Animal testing showed no developmental toxicity.
- Further information : Cardiac sensitisation threshold limit : > 172414 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed


DuPont™ Suva® 95 refrigerant

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION
Aquatic Toxicity
Perfluoroethane (FC-116)

96 h LC50 : Pimephales promelas (fathead minnow) 82.3 mg/l

96 h EC50 : Algae 37.5 mg/l

48 h EC50 : Daphnia magna (Water flea) 47.4 mg/l

Trifluoromethane (HFC-23)

96 h LC50 : Pimephales promelas (fathead minnow) 633.26 mg/l

96 h EC50 : Algae 154.54 mg/l

48 h EC50 : Daphnia magna (Water flea) 323.05 mg/l

Environmental Fate
Perfluoroethane (FC-116)

Bioaccumulation : Bioaccumulation is unlikely.

Trifluoromethane (HFC-23)

Biodegradability : Not readily biodegradable.

Bioaccumulation : Bioconcentration factor (BCF) : 3.2
Bioaccumulation is unlikely.

Additional ecological information : no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.

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


DuPont™ Suva® 95 refrigerant

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1078
	Proper shipping name	: Refrigerant gases, n.o.s. (Hexafluoroethane, Trifluoromethane)
	Class	: 2.2
	Labelling No.	: 2.2
IATA_C	UN number	: 1078
	Proper shipping name	: Refrigerant gas, n.o.s. (Hexafluoroethane, Trifluoromethane)
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 1078
	Proper shipping name	: REFRIGERANT GAS, N.O.S. (Hexafluoroethane, Trifluoromethane)
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s)	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Trifluoromethane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Trifluoromethane, Perfluoroethane
California Prop. 65	: WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Carbon monoxide



DuPont™ Suva® 95 refrigerant

Version 2.0

Revision Date 04/14/2015

Ref. 130000000550

SECTION 16. OTHER INFORMATION

SUVA is a registered trademark of E. I. du Pont de Nemours and Company

® DuPont's registered trademark

Before use read DuPont's safety information.

For further information contact the local DuPont office or DuPont's nominated distributors.

Revision Date : 04/14/2015

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.

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