

Genetron® 410A

Version 1.5

Revision Date 19.04.2011

Print Date 13.07.2012

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product information

Trade name : Genetron® 410A

Use of the Substance/Mixture : Refrigerant

Company/Undertaking Identification

Company : Honeywell Specialty Chemicals Seelze GmbH
Wunstorfer Straße 40
30926 Seelze

Telephone : (49) 5137-999 0
Telefax : (49) 5137-999 123
Emergency telephone number : (49) 5137-999 0(Seelze)
+1-703-527-3887(ChemTrec)
+1-651-523-0309(Medical PROSAR)

For further information, please contact: : PMTEU Product Stewardship:
SafetyDataSheet@Honeywell.com

2. HAZARDS IDENTIFICATION

Risk advice to man and the environment

This mixture is not classified as dangerous according to Directive 1999/45/EC.

Additional advice : Rapid evaporation of the liquid may cause frostbite.
High vapour concentrations can cause headaches, dizziness, drowsiness, and nausea, and may lead to unconsciousness.
May cause cardiac arrhythmia.

See Section 11 for more detailed information on health effects and symptoms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization

Chemical Name : Genetron® 410A

Hazardous components

Chemical Name	CAS-No.	EC-No.	Index-No.	Classification	Concentration
Difluoromethane	75-10-5	200-839-4		F+; R12	>= 25 - < 50
Pentafluoroethane	354-33-6	206-557-8			>= 25 - < 50

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the R-phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Inhalation : Remove to fresh air.

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- Skin contact : Artificial respiration and/or oxygen may be necessary.
Call a physician immediately.
: Rapid evaporation of the liquid may cause frostbite.
In case of contact with liquid, thaw frosted parts with water,
then remove clothing carefully. Wash with plenty of water
Consult a physician.
Take off contaminated clothing and shoes immediately.
Wash contaminated clothing before re-use.
- Eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids,
for at least 15 minutes.
If eye irritation persists, consult a specialist.
- Ingestion : As this product is a gas, refer to the inhalation section.
Do not induce vomiting without medical advice.
Never give anything by mouth to an unconscious person.
Call a physician immediately.

Notes to physician

- Treatment : Do not give adrenaline or similar drugs.

See Section 11 for more detailed information on health effects and symptoms.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : The product is not flammable.
ASTM D 56-82
ASTM E-681
Use water spray, alcohol-resistant foam, dry chemical or
carbon dioxide.
- Specific hazards during fire fighting : Possibility of generating hazardous reactions during a fire due
to the presence of F and Cl groups.
Heating will cause pressure rise with risk of bursting
Cool closed containers exposed to fire with water spray.
This product is not flammable at ambient temperatures and
atmospheric pressure.
However, this material can ignite when mixed with air under
pressure and exposed to strong ignition sources.
- Special protective equipment for fire-fighters : Wear full protective clothing and self-contained breathing
apparatus.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Immediately contact emergency personnel.
Wear personal protective equipment. Unprotected persons
must be kept away.
Ensure adequate ventilation.
In case of insufficient ventilation wear suitable respiratory
equipment.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
The product evaporates readily.

For personal protection see section 8.

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7. HANDLING AND STORAGE

Handling

Advice on safe handling : Open drum carefully as content may be under pressure.
The product should only be used in areas from which all naked lights and other sources of ignition have been excluded.
Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.
Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.
Do not use in areas without adequate ventilation.
Contaminated equipment (brushes, rags) must be cleaned immediately with water.

Storage

Further information on storage conditions : Store in original container.
Keep away from direct sunlight.
Keep containers tightly closed in a cool, well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : Remarks: In case of insufficient ventilation wear suitable respiratory equipment.

Hand protection : Glove material: Viton (R)
Heat insulating gloves

Eye protection : Safety glasses with side-shields conforming to EN166
Face-shield

Skin and body protection : Protective footwear

Protective measures : The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, safety shoes EN-ISO 20345.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form : Liquefied gas

Colour : colourless

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Odour : weak
molecular weight : Remarks: not applicable

Safety data

Boiling point/boiling range : -48,5 °C
Flash point : Remarks: not applicable
Vapour pressure : 14.844 hPa
at 21,1 °C
Vapour pressure : 33.798 hPa
at 54,4 °C
Density : 1,08 g/cm³
at 21,1 °C
pH : Remarks: neutral
Water solubility : 1,5 g/l
Partition coefficient: n-
octanol/water : log Pow 1,48
Medium: Ethane, pentafluoro- (HFC-125)
Partition coefficient: n-
octanol/water : log Pow 0,21
Medium: Difluoromethane (HFC-32)
Relative vapour density : 3
Remarks: (Air = 1.0)
Evaporation rate : > 1
Method: Compared to CCl₄.

10. STABILITY AND REACTIVITY

Conditions to avoid : Heating will cause pressure rise with risk of bursting
Pressurized container. Protect from sunlight and do not expose
to temperatures exceeding 50 °C.
Do not pierce or burn, even after use. Do not spray on a naked
flame or any incandescent material.
Materials to avoid : oxidising substances
Possible incompatibility with alkali sensitive materials.
Powdered metals
Hazardous decomposition : Halogenated compounds
products Hydrogen fluoride
Carbonyl halides
Carbon oxides
Thermal decomposition : >250 °C

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11. TOXICOLOGICAL INFORMATION

- Acute inhalation toxicity : LC50
Species: rat
Dose: > 800000 ppm
Exposure time: 4 h
Test substance: Ethane, pentafluoro- (HFC-125)
- Acute inhalation toxicity : LC50
Species: rat
Dose: 520000 ppm
Exposure time: 4 h
Test substance: Difluoromethane (HFC-32)
- Repeated dose toxicity : Species: rat
NOEL: 20000 ppm
- Information derived from practical experience. : Inhalation: May cause cardiac arrhythmia.
Ingestion: No hazards to be specially mentioned.
Skin contact: Rapid evaporation of the liquid may cause frostbite. Irritating to skin.
Eye contact: Irritating to eyes.
Ethane, pentafluoro- (HFC-125): Cardiac sensitisation threshold (dog): 75000 ppm.
Difluoromethane. (HFC-32): Cardiac sensitisation threshold (dog): 350000 ppm.

12. ECOLOGICAL INFORMATION

- Ozone Depletion Potential: : 0
- Additional ecological information : Accumulation in aquatic organisms is unlikely.

13. DISPOSAL CONSIDERATIONS

- Product : Offer surplus and non-recyclable solutions to a licensed disposal company.
Refer to manufacturer/supplier for information on recovery/recycling.
- Remarks : To present knowledge of the supplier, this product is not regarded as hazardous waste as defined by EU Directive 91/689/EC.
- Waste key for the unused product : Classification: 14.06.01

14. TRANSPORT INFORMATION

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ADR

UN Number : 3163
Description of the goods : LIQUEFIED GAS, N.O.S.
(PENTAFLUOROETHANE, DIFLUOROMETHANE)
Class : 2
Classification Code : 2A
Hazard identification No : 20
ADR/RID-Labels : 2.2

IATA

UN Number : 3163
Description of the goods : Liquefied gas, n.o.s.
(Pentafluoroethane, Difluoromethane)
Class : 2.2
Hazard Labels : 2.2
Packing instruction (cargo aircraft) : 200
Packing instruction (passenger aircraft) : 200

IMDG

UN Number : 3163
Description of the goods : LIQUEFIED GAS, N.O.S.
(PENTAFLUOROETHANE, DIFLUOROMETHANE)
Class : 2.2
Hazard Labels : 2.2
EmS Number : F-C
Marine pollutant : no

RID

UN Number : 3163
Description of the goods : LIQUEFIED GAS, N.O.S.
(PENTAFLUOROETHANE, DIFLUOROMETHANE)
Class : 2
Classification Code : 2A
Hazard identification No : 20
ADR/RID-Labels : 2.2

15. REGULATORY INFORMATION

Labelling according to EC Directives 1999/45/EC

S-phrases : S47/49 Keep only in the original container at a temperature not exceeding 50 °C.

Other regulations : For industrial use only.
Restricted to professional users.
EU Regulation 842/2006/EC

16. OTHER INFORMATION

Further information

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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. Final determination of suitability of any material is the sole responsibility of the user.

This information should not constitute a guarantee for any specific product properties.