

## Basic Safety Information For Accumulators

(Similar to MATERIAL SAFETY DATA SHEET)

This document offers safety information about accumulators for your consideration and guidance when exposed to this product.

Accumulators are not chemicals, chemical compounds or chemical mixtures. Therefore this document is only **similar** to a material safety data sheet according to Regulation (EC) No 1907/2006 (REACH).

### 1. PRODUCT/ MANUFACTURING AND COMPANY NAME

Product name: Hydraulic Accumulators

Identification: see Name Plate and Additional Labels according to standards.

Manufacturer: Freudenberg Sealing Technologies  
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(refer to FST – Accumulator Remagen)  
[www.freudenberg.com](http://www.freudenberg.com)

### 2. POSSIBLE HAZARDS

- Vessel is under pneumatic pressure depending on type (see marking / label).
- Accidental danger at opening, by escaping nitrogen.
- Have notice to labels on product.
- Working at the accumulator is allowed only by qualified personnel according instructions.
- N<sub>2</sub>: Compressed gas, in high concentrations, may cause asphyxiation.

### 3. COMPOSITION INFORMATION

#### Accumulator

Housing & connections: Steel

Separation element: Steel, Rubber, Plastic

Filling: Nitrogen N<sub>2</sub>  
Potential oil residue (Mineral oil of PED fluid group 2)

#### 4. FIRST AID MEASURES

Inhalation:	High Nitrogen concentrations may cause asphyxiation. Possible symptoms are loss of mobility and consciousness. The victim is not aware of asphyxiation. Take the victim in fresh air, using a self-contained breathing apparatus. Keep warm and calm. Call for a Doctor. If not breathing, artificial respiration.
Skin:	No known effect. Not an irritant.
Eyes :	No known effect. Not an irritant.
Ingestion :	Not an expected route of entry under normal conditions of use. (gas)

#### 5. FIRE-FIGHTING MEASURES

Extinguishing Media:	All known extinguishing media can be used. It is possibly to cool with water from a protected position.
Special procedures:	Nitrogen discharge in case of overheating and melting of the seals has a fire retardant effect.
Special protective equipment for firefighters:	In confined rooms use self-contained breathing device. Fire will destroy seal in side accumulator and pressurized Nitrogen could blow out (moving also the accumulator)

#### 6. MEASURES AT ACCIDENTAL DISCHARGE

Personal preventive measures:.	Leave the field Ventilate the room and ensure adequate ventilation. Gas can blow off under control.
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Restrict access to area until completion of clean-up. Keep all other personnel upwind and away from the spill/release. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus.

Environmental measures: If possible stop gas flow.  
Use personal protecting equipment.

Ensure spilled product does not enter confined areas. Ventilate area of release. Eliminate all ignition sources. Leaks in lines to equipment set-ups can be identified by painting suspected sites with soapy water. Leaks can be located by bubble formation. Stop spill or leak at source if safely possible. If leak cannot be stopped, move accumulator to an open space. Isolate the area until all gas has dispersed. Notify the appropriate authorities as required.

## 7. HANDLING AND STORAGE

- Handling: Use safety shoes and safety gloves. Transport only with secure attachment. Avoid damage.
- Storage: Only storing in dry and closed rooms, not more than three months. Protect from mechanical damage.

For longer storage times, or less favorable conditions of storage, safeguard measures may be required, this should be arranged by the future operator of the vessel. During transport and storage, the openings in the end caps of the pressure vessel must be sealed, to prevent penetration of dirt, moisture and condensation. The future operator of the plant takes over responsibility with the receipt of the pressure equipment as well as for appropriate storage according these requirements. He has to ensure, to avoid no longer storage or transport times in the actual packaging.

## 8. LIMITATION AND CONTROL EXPOSITION / PERSONAL PROTECTION EQUIPMENT

- Personal Protection      Ensure adequate ventilation
- Measures:                  Personal safety gloves and safety shoes.  
   For transport by lifting, wear a safety helmet.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Energy storage Vessel with metal or painted surface.  
Weight between 0,25KG and 100 kg depending on version.  
Nitrogen volume between 0 and 1500 liters depending on the version.

### **Nitrogen N<sub>2</sub>:**

Appearance:	Uncolored gas, odorless
Molar mass (kg/kmol):	28
Gas Boiling point:	-196°C
Melting point:	-210°C
Critical temperature:	-147°C
Explosion limits (Vol. % in air):	not flammable
Vapor pressure at 20° C:	not applicable
Relative density, gaseous (Air = 1):	0.97
Solubility in water (20° C, 1 bar):	20 mg/l

## 10. STABILITY AND REACTIVITY

Stabile under normal conditions.

The maximum allowable design pressure and temperature range, see on the name plate at the vessel.

With exposition of fire, it is possible that the vessel can burst!

## 11. TOXICOLOGICAL INFORMATION

Toxic effects of the product are not known.

## 12. ECOLOGICAL INFORMATION

Corruptive effects of the product to the environment are not known.

Water hazardous class (WGK): NWG - not water hazardous.

## 13. INFORMATIONS TO WASTE MANAGEMENT

Before disposal, make sure that the equipment is free of pressure on the gas and oil side. Sort the pressure vessel according to material that is to be disposed in accordance with the local environmental protection regulations.

Contaminated parts can be decontaminated in accordance with applicable local environmental regulations and disposal.

**N<sub>2</sub>**: Do not escape gas in the sewers, basements and pits or similar places because at these places the gas could become dangerous. Drain only in a well-ventilated place to the atmosphere. Consult the gas supplier if guidance is required.

### **Waste key-No./waste name (AVV):**

16 05 05 - gases in pressure vessels with exception of those mentioned in 16 05 04.

Attention: do never remove the retainer ring. Pressure relief with extreme caution by drilling a hole in the accumulator. The accumulator must be fixed and secured against any movement. Personnel Safety Equipment must be worn (safety goggles and ear protection). Room must be well ventilated (controlled condition).

## 14. REQUIREMENTS FOR TRANSPORTATION

Accumulators **without** a gas pre-charge can be transported by any means and without any difficulties, as they are **not dangerous goods**. For reasons of clarity this fact should be recorded clearly on the shipping documents.

Accumulators **with** a gas pre-charge need consideration of the **relevant transportation provisions**. The valid versions of these regulations must be applied and observed at all times.

**The sender is responsible for the application and observance of this relevant transportation provisions.**

### Transportation across country

ADR/RID:	Class:	2
	Classification Code:	6A UN-No.: 3164
	Risk labels:	2.2
	Description of goods:	Goods under pneumatic pressure.

### Marine transportation

IMDG:	Class:	2
	UN-No.:	3164
	Risk labels:	2.2
	EmS Code:	F-C, S-V
	Description of goods:	Articles, pressurized, pneumatic.

### Air transportation

ICAO/IATA-DGR:	Class:	2
	UN/id-no.:	3164
	Risk labels:	2.2
	Description of goods:	Articles, pressurized, pneumatic.

This transportation provisions **could be** applicable for gas pressure filled accumulator

### Further transport information's:

Avoid transport on vehicles where the load space is not separated from the driver cab. The driver has to know the potential hazards of the load, and he must know what to do in case of accident or emergency.

Prior to transport, start securing the accumulator. Ensure adequate ventilation.

Note applicable regulations.

### DISCLAIMER OF LIABILITY

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