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1. Substance/preparation and company description Brand name/part number of product

SACHS 319 173

Details of manufacturer/supplier:

Address of manufacturer/supplier:

ZF Friedrichshafen AG Ernst-Sachs-Straße 62 97424 Schweinfurt ☎ (0049)(0)9721/98-0

Information from: (00)(0)9721/98-3454

Mr. Dr. Schreiner Dept. Environmental Protection

Emergency information / Emergency number: Closest poisoning treatment centre, info: Mineral oil contact

2. Composition / info. on components Chemical characteristics (preparation)

| % Wt. | % Vol. | Chemical desc. | Haz. sym. | R sets |
|-------|--------|----------------------|-----------|--------|
| | | Various mineral oils | | |
| | | Compressed air | | |
| | | Aluminum tube | | |

The following information refers to the damper oil.

3. Possible hazards

Description of hazards: Intensive, lengthy and repeated skin contact can lead to skin irritation.

Safety risks: Avoid formation of oil mist.

Environmental hazards: Do not allow to escape uncontrolled into the environment. Damper oil is not completely biologically degradable. **SAFETY DATA SHEET** conforming with 91/155/EWG Date: 10.08.2000 Last revision on: 01.02.2013 Data sheet identification: D 05

Brand name: Twintube shock absorber

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4. First-aid measures

General information: Can cause loss of natural grease and irritation if in contact with the skin for some time.

After inhalation: Fresh air. Call doctor if symptoms persist.

After skin contact: Rinse well with soap and water. Intensive skin care required.

After eye contact: Rinse immediately with lots of water (10 min.)

After swallowing: Do not induce vomiting, call doctor.

Information for the doctor: Symptomatic treatment.

5. Fire-fighting measures

Suitable extinguishing materials: Ensure that extinguishing material is suitable for background fires

Unsuitable extinguishing materials for safety reasons:

Special hazards due to the material or combustion products: Container is under pressure. Cool it with water spray if affected by fire.

Special protective equipment required for fire-fighting: Ensure that protective equipment is suitable for background fires

6. Measures if unintentionally released

Personal safety measures: Avoid skin contact with damper oil. Immediately change contaminated working clothes.

Environmental measures: Protect sewers and surface water from damper oil.

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Procedures for cleaning: Use oil absorbing material and dispose contaminated material according to the regulations.

Supplementary advice: None

7. Handling and storage

Handling: Do not open containers, do not heat product, do not throw product or assemble/disassemble by force. Storage:

Store in clean and dry areas.

8. Exposure limits and personal protection equipment

Supplementary advice for the configuration of technical plant:

Components with workplace-related limits which must be monitored:

| Limits | Chem. description |
|--------|-------------------|
| | |
| | |
| | |

Personal protection equipment

| Breathing protection: | Only if oil mist escapes |
|-----------------------|--|
| Eye protection: | Wear safety goggles if risk of spraying |
| Skin protection: | Only in the case of lengthy skin contact |
| Other: | |

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9. Physical and chemical characteristics Damper oil

| Form: Liquid | Colour: various | Odour: Like mineral oil |
|---|----------------------------------|-------------------------|
| Change in physical state: Melting point or range Boiling point or range | max45 ºC ⁰C | Tested acc. to |
| Density: Bulk density: | approx. 0.85 g/ccm | ı |
| Vapour pressure: For aerosols & gases: Values at 20 °C | < 0.1 mbar | |
| Viscosity: | 11 – 60 mm²/ s | |
| Solvent separation test: | smaller greater/sam | ne3 % |
| Solids content: | % | |
| Solubility: | Virtually insoluble | |
| pH value: | not applicable | |
| Flashpoint: | 120 - 180 °C | |
| Ignition temperature: | ٥C | |
| Explosion limits in air: | Lower 0.6% Upper 6.5% | |
| Thermal decomposition: | above 360 °C | |
| Decomposition products: Prop. by weight % | | |
| Dangerous reactions (with): | Possible reaction with strong of | oxidizers |
| Additional information: | | |

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10. Stability and reactivity

Conditions to avoid: Damper oil is stable if used as specified

Substances to avoid: Avoid contact with strong oxidizers.

Hazardous decomposition products: No hazardous decomposition products under normal conditions

Additional information: In the case of frequent skin contact use personal protection equipment. (Gloves, protective and care creams, liquid soap)

11. Toxicological information

Toxicological testing: LD50, oral - rats > 5000 mg/kg LD50, dermal - rabbits > 3000 mg/kg

12. Ecological information

Elimination details (persistence and degradability):

Behaviour in environmental compartments:

Ecotoxic effect: Further information on ecology: WGK2

13. Disposal information

Product:Steel parts:160117 steel scrapAluminum parts:160118 aluminum scrapDamper oil:130113 other waste oil / hydraulic oilPlastic and rubber parts:160119 plastic and rubber wasteUncleaned packages:not applicable

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| | | | Page 7 o |
|---|----------------------------------|--|--|
| • | regulations sport (roa | d/rail, national an | d international) |
| ADR/RID/G Warning sig Proper Shippi flammable ga | gn: - ng Name: ART | | Classification Code: 6A b.: - UN no.: UN 3164 ED, PNEUMATIC (containing non- |
| Remarks: 1 | he release o | conditions of 594 | 4 and 283 are fulfilled. |
| Transport | by Inland wa | aterways | |
| ADN/ADNF | R | Class: 2 | Classification Code: 6A UN no.: UN 3164 |
| Proper Shippi flammable ga | | ICLES, PRESSURIZ | ED, PNEUMATIC (containing non- |
| Remarks: The releas | e conditions | s of 594 and 283 | are fulfilled. |
| Ocean-goi | ng ship tran | sport | |
| IMDG/GGV | 'See | Class: 2.2 PG: - EMS: - | UN no.: UN 3164 |
| Marine poll Proper Ship | utant: oping Name: | No Articles , pi non-flamma | ressurized, pneumatic, containing able gas |
| | | conditions of 283 4 can be used acc | 3 are fulfilled. cording to the gas volume. |
| Air transp | ort | | |
| ICAO/IATA | | Class: 2.2 | UN no.: UN 3164 |
| Proper Ship flammable | | Articles , pressur | ized, pneumatic, containing non- |
| Remarks: | The release | conditions of A | 114 are fulfilled. |
| Postal trans | sport | | |
| | | general postal dia ail, national / inte | |
| | | | |

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15. Regulations

Certification acc. to EU guidelines: Referring to damper oil

National regulations.

| Classification acc. to Vbf : | No |
|-------------------------------------|---------------------|
| Tech. instructions - AIR (TA-Luft): | Class 3 |
| Water balance law | WGK 2, water-hazard |
| Employment restrictions : | None |
| Incident regulations: | - |

16. Miscellaneous

Further information:Tolerance values from the professional institute for health and safety at work:Aerosol concentration5 mg/cbmVapour and aerosol conc.20 mg/cbm

The standard safety measures for handling mineral oil products must be followed.

There is no legal duty to provide the information in this data sheet (see Section 15).

The information is provided voluntarily and with the best of the knowledge available at the date of the revision.

It does not guarantee the retention of particular properties within the meaning of a legal obligation.