

MATERIAL SAFETY DATA SHEET
According to 91/155/EC

Printing date 16.11.2001

Reviewed on 20.09.2001

1 Identification of substance:

- Product details:
- Trade name: LINDE KETTENSPRAY
- Manufacturer:
FUCHS DEA SCHMIERSTOFFE GMBH & CO. KG EXPORT DIVISION
Friesenheimer Str. 15
D-68169 Mannheim
Tel 49 (0)621 3701 0 (Switch Board) Fax 49 621 3701 303
- Informing department: Product safety department Tel 49 621 3701 333
- Emergency information:
Tel 49 621 3701 333 or 49 621 3701 0 (Switch Board)

* 2 Composition/Data on components:

- Chemical characterization
 - Description: Mixture of components with propellant in aerosol can.
- | | | |
|--------------------------------|-----------|---------|
| Dangerous components: | R-phrases | |
| Isopentane | | 15-20 % |
| Xn, F+, N; R 12-51/53-65-66-67 | | |

3 Hazards identification

- Hazard designation: F+ Extremely flammable
- Information pertaining to particular dangers for man and environment
This product is water polluting; see item 12.
R 12 Extremely flammable.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use. Do not spray into flame or on glowing object. Keep out of the reach of fire - don't smoke.
Contains at 55 per cent flammable components.
Keep out of the reach of children.
- Classification system
The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.
The classification results from the Conventional Method of 88/379/EEC concerning specific data of compounds.

4 First aid measures

- General information
Change clothes and shoes contaminated or soaked by the product.
Never put rags contaminated by the product into cloth-pockets.
- After inhalation
Supply fresh air; consult doctor in case of symptoms.
(eventually by inhaling the overheated product)
- After skin contact The product is not skin irritating.

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- After eye contact
Rinse opened eye for several minutes under running water.
- After swallowing In case of persistent symptoms consult doctor.

5 Fire fighting measures

- Suitable extinguishing agents
CO₂, sand, extinguishing powder. Do not use water.
- For safety reasons unsuitable extinguishing agents
Water with a full water jet.
- Special hazards caused by the material, its products of combustion or flue gases:
Danger of explosion with aerosol cans.
- Protective equipment:
In case of fire fighting: wear self containing breathing apparatus

6 Accidental release measures

- Person-related safety precautions:
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources
- Environmental protection measures:
Do not allow to enter drainage system, surface or ground water.
- Measures for cleaning/collecting:
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Dispose of the material collected according to regulations.

7 Handling and storage

- Handling
- Information for safe handling:
Keep away from heat and direct sunlight.
Use only in well ventilated areas.
Do not eat, drink or smoke when working with the product.
Take usual precautions when handling mineral oil products or chemical products.
- Information about protection against explosions and fires:
Keep ignition sources away.- Do not smoke!
Beware: Container is pressurized. Keep away from direct sun exposure and temperatures over 50°C. Do not open by force or throw into fire even after use.
Do not spray on flames or red-hot objects.
- Storage
- Requirements to be met by storerooms and containers:
Store in cool location.
Observe official regulations on storing packagings with pressurized containers.
Local regulations for the storage and handling of aerosol cans are to be kept.

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- Information about storage in one common storage facility:
Store away from foodstuffs.
Local regulations for the storage and handling of aerosol cans and flammable liquids have to be kept.
- Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from heat and direct sunlight.
Local regulations concerning handling and storage of waterpolluting products have to be followed.
- Storage class
- Class according to regulation on inflammable liquids: Void

8 Exposure controls and personal protection

- Additional information about design of technical systems:
No further data; see item 7.
- Components with critical values that require monitoring at the workplace:
Butane (25-50%)
OES: Short-term value: 1810 mg/m³, 750 ppm
Long-term value: 1450 mg/m³, 600 ppm
Propane (10-15%)
OES: Asphyxiant
- Additional information:
The lists that were valid during the compilation were used as basis.
- Personal protective equipment
- General protective and hygienic measures
The usual precautionary measures should be adhered to in handling the chemicals and the mineral oil products.
Wash hands during breaks and at the end of the work.
Avoid close or long term contact with the skin.
Use skin protection cream for preventive skin protection.
Do not carry cleaning cloths impregnated with the product in trouser pockets.
- Breathing equipment: Not required.
- Protection of hands: Protective gloves and protective skin cream.
- Eye protection: Tightly sealed safety glasses.
- Body protection: Protective work clothing.

9 Physical and chemical properties:

- Form: Aerosol
- Colour: Yellow
- Smell: Characteristic
- Change in condition
- Melting point/Melting range: Not determined
- Boiling point/Boiling range: Not applicable, as aerosol

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- Flash point: < 0 ° C ISO 2592
- Self-inflammability: Product is not selfigniting.
- Danger of explosion:
Product is not explosive. However,
formation of explosive air/steam
mixtures is possible.
- Critical values for explosion:
 - Lower: 1.3 Vol %
 - Upper: 10.9 Vol %
- Density Not applicable
- Solubility in / Miscibility with
 - Water: Not miscible or difficult to mix

10 Stability and reactivity

- Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
- Dangerous reactions No dangerous reactions known
- Dangerous products of composition:
No dangerous decomposition products known

11 Toxicological information

- Acute toxicity:
- Primary irritant effect:
 - on the skin: No irritant effect known.
 - on the eye: No irritant effect known.
- Sensitization: No sensitizing effect known.

12 Ecological information:

- Behaviour in environmental systems:
- Mobility and bioaccumulation potential: No data available
- Ecotoxicological effects:
- Behaviour in sewage processing plants:
The product swims on the water surface.
- General notes:
German Water Endangering Class 1 (Self-assessment): slightly hazardous
for water.
Do not allow to reach ground water, water bodies or sewage system.

* 13 Disposal considerations

- Product:

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- Recommendation
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
When storing used mineral oil products, ensure that the categories for waste oil and mixing instructions are observed.
Delivery of waste oil only to officially authorized collectors.
- European waste catalogue
20 01 05: small metals (cans etc.)
20 01 22: aerosols
- Uncleaned packagings:
- Recommendation:
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Small one-way packagings have to be disposed according to the local regulations.
EWC 15 01 99.

14 Transport information

- Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)
 - ADR/RID-GGVS/E Class: 2 Gases.
 - Number/Letter: 5F
 - Kemler Number: -
 - UN-Number: 1950
 - Label: 3
 - Designation of goods: Druckgaspackungen
 - Remarks: Aerosols, limited quantity.
- Maritime transport IMDG/GGVSea:
 - IMDG/GGVSea Class: 2
 - Page: 2102
 - UN Number: 1950
 - Packaging group: -
 - EMS Number: 2-13
 - MFAG: 620
 - Marine pollutant: no
 - Correct technical name: Aerosols, flammable
 - Remarks: Aerosols, flammable, Class 2, limited quantity.
- Air transport ICAO-TI and IATA-DGR:
 - ICAO/IATA Class: 2.1
 - UN/ID Number: 1950
 - Packaging group: -
 - Correct technical name: Aerosols, flammable
 - Remarks:
Aerosols, flammable, Class 2, limited quantity.
Use the label No. 2.1 at sea- and air transport.

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15 Regulatory information

- Designation according to EU guidelines:
The product has been classified and labelled in accordance with EC Directives until 2000/32/EC (26.ATP).
Observe the normal safety regulations when handling chemicals or mineral oil products.
- Code letter and hazard designation of product: F+ Extremely flammable
- Risk phrases: 12 Extremely flammable.
- Safety phrases:
3 Keep in a cool place.
16 Keep away from sources of ignition - No smoking.
51 Use only in well-ventilated areas.
- Special designation of certain preparations:
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use. Do not spray into flame or on glowing object. Keep out of the reach of fire - don't smoke.
Contains at 55 per cent flammable components.
Keep out of the reach of children.
- National regulations
- Classification according to VbF: Void
- German Water Hazard Class:
Water Engangering Class 1 (Self-assessment): slightly hazardous for water.
- Other regulations, limitations and prohibitive regulations
Local regulations are to be kept.

16 Other information:

All ingredients are listed in the European Inventories. These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. This data sheet is a safety data sheet according to 91/155/EU. For products which are not subject to classification according to EU lists this data sheet is made on a voluntary base.

- Department issuing data specification sheet:
FUCHS DEA SCHMIERSTOFFE GMBH & CO. KG / Export Division
Product Safety Departement
- Contact: Mrs. Dipl.-Chem. Manuwald

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· Validity:

With this latest edition of this MSDS all former editions are not
valid any longer.

Changed items are marked with "*".
