

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

amended by 2020/878/EU

# FRAGOL

## FRAGOLTHERM F-12

Version number: 6.0  
Replaces version of: 16.05.2024 (5)

Revision: 02.09.2025

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name	<b>FRAGOLTHERM F-12</b>
Identification of the substance	<b>Hydrocarbons, C11-C13, isoalkanes, &lt;2% aromatics</b>
Registration number (REACH)	01-2119456810-40-xxxx
EC number	920-901-0

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Heat transfer fluid Professional use
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#### 1.3 Details of the supplier of the safety data sheet

FRAGOL AG  
Solinger Straße 16  
D-45481 Mülheim  
Germany

Telephone: +49 (0)208-300 02-50  
Telefax: +49 (0)208-300 02-33  
e-mail: htf@fragol.de  
Website: www.fragol.de

e-mail (competent person) htf@fragol.de

#### 1.4 Emergency telephone number

Emergency information service	+49 (0)208-300 02-50 This number is only available during the following office hours: Mon-Fri 09:00 - 17:00
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Poison centre		
Country	Name	Telephone
Germany	Giftnotruf der Charité - Universitätsmedizin Berlin	+49 30 30 686 700 (24/7)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.10	aspiration hazard	1	Asp. Tox. 1	H304

For full text of H-phrases: see SECTION 16

Code	Supplemental hazard information
EUH066	repeated exposure may cause skin dryness or cracking

#### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- signal word Danger

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### - pictograms

GHS08



### - hazard statements

H304 May be fatal if swallowed and enters airways.

### - precautionary statements

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P331 Do NOT induce vomiting.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### - supplemental hazard information

EUH066 Repeated exposure may cause skin dryness or cracking.

## 2.3 Other hazards

This material is combustible, but will not ignite readily. The material can accumulate static charges, which can cause inflammation. The material can release vapors that can quickly form flammable mixtures. The accumulation of fumes can fizzle or explode when ignited. Repeated exposure may cause skin dryness or cracking. May cause respiratory tract irritation when present in a form of oil mist or vapors at high temperatures. May cause irritation to the eyes, nose, throat and lungs.

### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

### Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance	Hydrocarbons, C11-C13, isoalkanes, <2% aromatics
Identifiers	
REACH Reg. No	01-2119456810-40-xxxx
EC No	920-901-0

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General notes

Do not leave affected person unattended. Remove victim out of the danger area. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician.

#### Following skin contact

Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

#### Following eye contact

Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

#### Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. IF SWALLOWED: Immediately call a POIS-

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ON CENTER/doctor. Call a POISON CENTER or doctor if you feel unwell.

### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

### 4.3 Indication of any immediate medical attention and special treatment needed

For specialist advice physicians should contact the poison centre.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Water spray; Alcohol resistant foam; Dry extinguishing powder; Carbon dioxide (CO<sub>2</sub>);  
Co-ordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media

Water jet.

### 5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

During fire hazardous fumes/smoke could be produced. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (EN 133). Standard protective clothing for firefighters.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases. Use personal protective equipment as required.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Recommendations

- measures to prevent fire as well as aerosol and dust generation  
Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

#### 7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- flammability hazards  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- incompatible substances or mixtures  
Keep away from alkalis, oxidising substances, acids.

Control of effects

Protect against external exposure, such as  
High temperatures. UV-radiation/sunlight.

Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed.

- packaging compatibilities  
Keep only in original container.

#### 7.3 Specific end use(s)

See section 1.2.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

**National limit values**

No information available.

**Relevant DNELs/DMELs/PNECs and other threshold levels**

No data available.

#### 8.2 Exposure controls

Appropriate engineering controls

General ventilation. Provide eyewash stations and safety showers at the workplace.

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection (EN 166).

Skin protection



Protective clothing (EN 340 & EN ISO 13688).

Hand protection



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Wear suitable gloves. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Chemical protection gloves are suitable, which are tested according to EN 374. ATTENTION: Wearing moisture-proof gloves (occlusion) for longer than 4 hours is defined as a risk in Germany. The selection of the suitable gloves does not only depend on the material, but also on other quality characteristics and varies from manufacturer to manufacturer.

- type of material

Nitrile rubber

- material thickness

Use gloves with a minimum material thickness:  $\geq 0,38$  mm.

- breakthrough time of the glove material

Use gloves with a minimum breakthrough time of the glove material: >480 minutes (permeation: level 6).

- other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

### Respiratory protection

In case of inadequate ventilation wear respiratory protection. Type: A (against organic gases and vapours with a boiling point of  $> 65$  °C, colour code: Brown).

### Environmental exposure controls

Take appropriate precautions to avoid uncontrolled release into the environment. Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	194 °C
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	LEL: 0,6 vol% / UEL: 7 vol%
Flash point	62 °C (ASTM D 93)
Auto-ignition temperature	222 °C (ASTM E 659)
Decomposition temperature	no data available
pH (value)	not determined
Kinematic viscosity	1,18 mm <sup>2</sup> /s at 40 °C
Solubility	not determined

Partition coefficient n-octanol/water (log value)	>4
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Vapour pressure	0,04 kPa at 20 °C
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### Density and/or relative density

Density	763 kg/m <sup>3</sup> at 20 °C
Relative density / Relative vapour density	5,7 (air = 1) 0,76 (water = 1)

Particle characteristics	not relevant (liquid)
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### 9.2 Other information

Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant
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### Other safety characteristics

Surface tension	24,1 mN/m (25 °C)
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials

Oxidisers.

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Classification according to GHS (1272/2008/EC, CLP)

#### Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity			
Exposure route	Endpoint	Value	Species
oral	LD50	>5.000 mg/kg	rat
inhalation: vapour	LC50	>4.951 mg/m <sup>3</sup> /4h	rat
dermal	LD50	>2.200 - 2.500 mg/kg	rabbit

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

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### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

### Carcinogenicity

Shall not be classified as carcinogenic.

### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

### Aspiration hazard

May be fatal if swallowed and enters airways.

### Other information

Vapor concentrations above recommended exposure limits are irritating to the eyes and the respiratory tract, can cause headaches and dizziness, have anesthetic effects, and may have other effects on the central nervous system. Prolonged and / or repeated skin contact with low viscosity materials may decrease the skin and possibly cause irritation and inflammation of the skin. If ingested or vomited, small amounts of fluid aspirated into the lungs may cause chemical pneumonitis or pulmonary edema.

## 11.2 Information on other hazards

### Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

### Other information

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

Acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)			
Endpoint	Value	Species	Exposure time
LL50	$>1.000 \text{ mg/l}$	fish	24 h
EL50	$>1.000 \text{ mg/l}$	aquatic invertebrates	24 h

### 12.2 Persistence and degradability

Process of degradability		
Process	Degradation rate	Time
oxygen depletion	7,3 %	4 d
carbon dioxide generation	0 %	3 d

### 12.3 Bioaccumulative potential

n-octanol/water (log KOW)	$>4$
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### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

### 12.7 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

#### Relevant provisions relating to waste

List of wastes, Decision 2000/532/EC on the list of waste

No waste code number can be assigned for this product according to the European Waste Catalogue, as classification is only possible based on the intended use by the consumer. The waste code number must be assigned according to the European Waste Catalogue (Commission Decisions 200/532/EC and 2001/118/EC) in consultation with the regional waste disposal company

#### Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

## SECTION 14: Transport information

14.1	UN number or ID number	not subject to transport regulations
14.2	UN proper shipping name	not relevant
14.3	Transport hazard class(es)	none
14.4	Packing group	not assigned
14.5	Environmental hazards	non-environmentally hazardous acc. to the dangerous goods regulations
14.6	Special precautions for user	There is no additional information.
14.7	Maritime transport in bulk according to IMO instruments	No data available.

### Additional information for each of the UN Model Regulations

#### Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - additional information

Not subject to ADR, RID and ADN.

#### International Maritime Dangerous Goods Code (IMDG) - additional information

Not subject to IMDG.

#### International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

Not subject to ICAO-IATA.

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### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

##### Relevant provisions of the European Union (EU)

##### Restrictions according to REACH, Annex XVII

Name	Name acc. to inventory	Restriction	No
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC	R3	3

##### Legend

- R3
1. Shall not be used in:
    - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ash-trays,
    - tricks and jokes,
    - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
  2. Articles not complying with paragraph 1 shall not be placed on the market.
  3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
    - can be used as fuel in decorative oil lamps for supply to the general public, and
    - present an aspiration hazard and are labelled with H304.
  4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
  5. Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
    - (a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage";
    - (b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter fluid may lead to life threatening lung damage';
    - (c) lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.;

##### List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

Not listed.

##### Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
	not assigned		

##### Directive on industrial emissions (VOCs, 2010/75/EU)

VOC content	100 %
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##### Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

Not listed.

##### Water Framework Directive (WFD)

Not listed.

##### Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013

Not listed.

##### Regulation on persistent organic pollutants (POP)

Not listed.

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### National regulations (Germany)

#### Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water) (AwSV)

Wassergefährdungsklasse, WGK 1 slightly hazardous to water  
(water hazard class)

### Technical instructions on air quality control (Germany)

Number	Group of substances	Class	Conc.	Mass flow	Mass concentration	Notation
5.2.5	organic substances		≥ 25 wt%	0,5 kg/h	50 mg/m <sup>3</sup>	3)

#### Notation

3) a total mass flow of 0.50 kg/h or a total mass concentration of 50 mg/m<sup>3</sup>, each of which to be indicated as total carbon, shall not be exceeded (except organic particulate matter)

### Storage of hazardous substances in non-stationary containers (TRGS 510) (Germany)

Storage class (LGK) 10 (combustible liquids)

## 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance by the supplier.

## SECTION 16: Other information

### Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)
7.3	Specific end use(s): There is no additional information.	Specific end use(s): See section 1.2.
9.2	Surface tension: 24,1 mN/m (25 °C) (ECHA)	Surface tension: 24,1 mN/m (25 °C)
13.1	List of wastes, Decision 2000/532/EC on the list of waste: For this product, no waste code number can be defined according to the European Waste List (EAK), as only the intended use by the consumer permits allocation. The waste code number shall be determined in accordance with the European waste list (Commission Decisions 200/532/EC and 2001/118/EC) in consultation with the waste disposal/manufacture/authority	List of wastes, Decision 2000/532/EC on the list of waste: No waste code number can be assigned for this product according to the European Waste Catalogue, as classification is only possible based on the intended use by the consumer. The waste code number must be assigned according to the European Waste Catalogue (Commission Decisions 200/532/EC and 2001/118/EC) in consultation with the regional waste disposal company
16		Abbreviations and acronyms: change in the listing (table)

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level

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Abbr.	Descriptions of used abbreviations
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ELINCS	European List of Notified Chemical Substances
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
LGK	Lagerklasse (storage class according to TRGS 510, Germany)
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
SVHC	Substance of Very High Concern
TRGS	Technische Regeln für Gefahrstoffe (technical rules for hazardous substances, Germany)
UEL	Upper explosion limit (UEL)
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H304	May be fatal if swallowed and enters airways.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product. FRAGOL cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, stor-

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The logo for FRAGOL, consisting of the word "FRAGOL" in a bold, yellow, sans-serif font. The letter "O" is stylized with a white circle inside it.

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age and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.