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

1.1 Product identifier

Trade name: Kryo 51

This safety data sheet pertains to the following products:
LZB 121: 5 L
LZB 221: 10 L
LZB 321: 20 L

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

General use: Heat transfer fluids
Industrial use
Professional uses / Public domain

1.3 Details of the supplier of the safety data sheet

Company name: Lauda Dr. R. Wobser GmbH & Co. KG
Street/POB-No.: Laudaplatz 1
Postal Code, city: 97922 Lauda-Königshofen
Germany
WWW: www.lauda.de
E-mail: info@lauda.de
Telephone: +49 (0)9343-503-0
Telefax: +49 (0)9343-503-222

Department responsible for information:
Department Quality Management,
Telephone: +49 9343 503-331, e-mail info@lauda.de

1.4 Emergency telephone number

National Poisons Information Service (Birmingham Unit)
Telephone: 844 892 0111

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

This substance is classified as not hazardous.

2.2 Label elements

Labelling (CLP)

Hazard statements: not applicable

Precautionary statements: not applicable

Special labelling

EUH210 Safety data sheet available on request.

2.3 Other hazards

Measurements taken at temperatures exceeding 150 °C have revealed that a small quantity of formaldehyde splits off through oxidative decomposition.
Formaldehyde vapour is harmful by inhalation and irritating to eyes and respiratory system at breathing concentration less than one part per million (1ppm).
Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:

CAS No.	Designation	PBT/vPvB	ED Human	ED Environment
540-97-6	Dodecamethylcyclohexasiloxane (SVHC)	PBT, vPvB	List II	
556-67-2	Octamethylcyclotetrasiloxane (SVHC)	PBT, vPvB	List II, III	

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical characterisation: Polydimethylsiloxane, ≥95 %

Hazardous ingredients:

Identifiers	Designation Classification	Content
REACH 01-2119517435-42-xxxx EC No. 208-762-8 CAS 540-97-6	Dodecamethylcyclohexasiloxane (SVHC) not classified	< 1 %
REACH 01-2119529238-36-xxxx EC No. 209-136-7 CAS 556-67-2	Octamethylcyclotetrasiloxane (SVHC) Flam. Liq. 3; H226. Repr. 2; H361f. Aquatic Chronic 1; H410. M-factors: Aquatic Chronic 1: M = 10.	< 0.25 %

Full text of H- and EUH-statements: see section 16.

Additional information: Contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: Dodecamethylcyclohexasiloxane (PBT (Article 57d); vPvB (Article 57e)), Octamethylcyclotetrasiloxane (PBT (Article 57d); vPvB (Article 57e))

SECTION 4: First aid measures

4.1 Description of first aid measures

In case of inhalation: Provide fresh air. Seek medical treatment in case of troubles.

Following skin contact: Take off contaminated clothing. Take off contaminated clothing and wash it before reuse. In case of skin reactions, consult a physician.
Protect skin by using skin protective cream.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist in the event of irritation.

After swallowing: Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water spray jet, alcohol resistant foam, extinguishing powder, carbon dioxide, sand

Extinguishing media which must not be used for safety reasons:
Full water jet

5.2 Special hazards arising from the substance or mixture

Flammable liquid. Heating will lead to pressure increase: Danger of bursting and explosion.
May form dangerous gases and vapours in case of fire.
Measurements taken at temperatures exceeding 150 °C have revealed that a small quantity of formaldehyde splits off through oxidative decomposition.

5.3 Advice for firefighters

Special protective equipment for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information: Hazchem-Code: -

Do not allow fire water to penetrate into surface or ground water. Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with the substance. Eliminate all ignition sources if safe to do so.
Avoid breathing mist/vapours/spray.
Ensure adequate ventilation, especially in confined areas.
Take off contaminated clothing and wash it before reuse. Keep unprotected people away.

6.2 Environmental precautions

Do not allow to penetrate into soil, waterbodies or drains.

6.3 Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Thoroughly clean surrounding area.

Additional information: Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Avoid contact with skin and eyes.
Wear appropriate protective equipment.
Provide adequate ventilation, and local exhaust as needed. Take off contaminated clothing and wash it before reuse. Avoid breathing mist/vapours/spray.

Precautions against fire and explosion:
Keep away from sources of ignition and heat.
Take precautionary measures against static discharges.
When using product or filling containers, use only grounded equipment with bonding leads.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:
Store in well closed containers in a cool, dry, well-ventilated area.
Keep container dry. Keep only in the original container.

Hints on joint storage: Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Additional information: Contains no substances with occupational exposure limit values.

DNEL/DMEL:

Information about Dodecamethylcyclohexasiloxane:
DNEL workers, inhalative, systemic, long-term: 11 mg/m³
DNEL workers, inhalative, local, long-term: 1.22 mg/m³
DNEL workers, inhalative, local, short-term: 6.1 mg/m³
DNEL consumers, inhalative, systemic, long-term: 2.7 mg/m³
DNEL consumers, inhalative, local, long-term: 0.3 mg/m³
DNEL consumers, inhalative, local, short-term: 1,5 mg/m³
DNEL consumers, oral, systemic, long-term: {dec 1,7 mg/kg bw/d
DNEL consumers, oral, systemic, short-term: 1.7 mg/kg bw/d

Information about Octamethylcyclotetrasiloxane:
DNEL workers, inhalative, systemic, long-term: 73 mg/m³
DNEL workers, inhalative, local, long-term: 73 mg/m³
DNEL consumers, inhalative, systemic, long-term: 13 mg/m³
DNEL consumers, inhalative, local, long-term: 13 mg/m³
DNEL consumers, oral, systemic, long-term: 3.7 mg/kg bw/d

PNEC:

Information about Dodecamethylcyclohexasiloxane:
PNEC sewage treatment plant: 1 mg/L
PNEC sediment (freshwater): 13 mg/kg
PNEC sediment (marine water): 1.3 mg/kg
PNEC soil: 3.77 mg/kg

Information about Octamethylcyclotetrasiloxane:
PNEC water (freshwater): 1.5 µg/L
PNEC water (marine water): 0.15 µg/L
PNEC sewage treatment plant: 10 mg/L
PNEC sediment (freshwater): 3 mg/kg
PNEC sediment (marine water): 0.3 mg/kg
PNEC soil: 0.54 mg/kg

8.2 Exposure controls

When aerosols and vapours form: Withdraw by suction.

Personal protection equipment

Occupational exposure controls

Respiratory protection:
Respiratory protection in case of aerosol or vapour formation
Use combination filter type A-P2 according to EN 14387.

Hand protection:
Protective gloves according to BS EN 374.
Glove material: Butyl caoutchouc (butyl rubber), nitrile rubber
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:
Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:
Wear suitable protective clothing.

General protection and hygiene measures:
Avoid contact with skin and eyes. Take off contaminated clothing and wash it before reuse.
Wash hands before breaks and after work. Do not eat, drink or smoke when using this product.

Environmental exposure controls

Refer to "6.2 Environmental precautions".

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Physical state at 20 °C and 101.3 kPa: liquid Colour: colourless
Odour:	Weak
Odour threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	> 120 °C
Flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Vapour pressure:	No data available
Vapour density:	No data available
Density:	at 25 °C: 0.92 g/mL
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	Measurements taken at temperatures exceeding 150 °C have revealed that a small quantity of formaldehyde splits off through oxidative decomposition. Formaldehyde vapour is harmful by inhalation and irritating to eyes and respiratory system at breathing concentration less than one part per million (1ppm).
Viscosity, kinematic:	at 25 °C: approx. 5 mPa*s
Explosive properties:	Vapours can form explosive mixtures with air.
Oxidizing characteristics:	No data available

9.2 Other information

Auto-ignition temperature:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Refer to subsection "Possibility of hazardous reactions".

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge.

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

No hazardous decomposition products when regulations for storage and handling are observed.

Thermal decomposition: Measurements taken at temperatures exceeding 150 °C have revealed that a small quantity of formaldehyde splits off through oxidative decomposition.
Formaldehyde vapour is harmful by inhalation and irritating to eyes and respiratory system at breathing concentration less than one part per million (1ppm).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity: ATE oral: > 5000 mg/kg
ATE dermal: > 2000 mg/kg

Toxicological effects: Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.

Skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

General remarks

Measurements taken at temperatures exceeding 150 °C have revealed that a small quantity of formaldehyde splits off through oxidative decomposition.
Formaldehyde vapour is harmful by inhalation and irritating to eyes and respiratory system at breathing concentration less than one part per million (1ppm).

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity: Based on available data, the classification criteria are not met. According to current data, no harmful effects are expected with release to sewage treatment facility.
LC50/EC50/IC50/LL50/EL50 > 100 mg/L (By analogy)

12.2 Persistence and degradability

Further details: The product can be eliminated from water by abiotic processes, e.g. adsorption on activated sludge.
Not readily biodegradable (according to OECD criteria)

Effects in sewage plants: Technically correct releases of minimal concentrations to adapted biological sewage plants, will not disturb the biodegradability of activated sludge.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:
No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

General information: Do not allow to penetrate into soil, waterbodies or drains.

Octamethylcyclotetrasiloxane (D4) meets the current EU REACH Annex XIII criteria for PBT and vPvB and has been added to the candidate list for Substances of very high concern (SVHC). However our understanding of the available science is that D4 does not behave similarly to known PBT/vPvB substances. The silicones industries interpretation of the available data is that the weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by naturally occurring reactions in the atmosphere. Any D4 in air that does not degrade by these reactions is not expected to deposit from the air to water, to land, or to living organisms.
Dodecamethylcyclohexasiloxane (D6) meets the current EU REACH Annex XIII criteria for vPvB and has been added to the candidate list for Substances of very high concern (SVHC). However our understanding of the available science is that D6 does not behave similarly to known PBT/vPvB substances. The silicones industries interpretation of the available data is that the weight of scientific evidence from field studies shows that D6 is not biomagnifying in aquatic and terrestrial food webs. D6 in air will degrade by naturally occurring reactions in the atmosphere. Any D6 in air that does not degrade by these reactions is not expected to deposit from the air to water, to land, or to living organisms.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number: 07 02 17 = waste containing silicones

Recommendation: Special waste. Dispose of waste according to applicable legislation.

Package

Recommendation: Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number

ADR/RID, IMDG, IATA-DGR: not applicable

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: Not restricted

14.3 Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR: not applicable

14.4 Packing group

ADR/RID, IMDG, IATA-DGR: not applicable

14.5 Environmental hazards

Marine pollutant: no

14.6 Special precautions for user

No dangerous good in sense of these transport regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

No data available

SECTION 15: Regulatory information

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

National regulations - Great Britain

Hazchem-Code: -

No data available

National regulations - EC member states

Further regulations, limitations and legal requirements:

Use restriction according to REACH annex XVII, no.: 70,75
Contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: Dodecamethylcyclohexasiloxane (CAS 540-97-6) and Octamethylcyclotetrasiloxane (CAS 556-67-2)

15.2 Chemical Safety Assessment

No data available

SECTION 16: Other information

Further information

Wording of the H-phrases under paragraph 2 and 3:

H226 = Flammable liquid and vapour.
H361f = Suspected of damaging fertility.
H410 = Very toxic to aquatic life with long lasting effects.
EUH210 = Safety data sheet available on request.

Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
Aquatic Chronic: Hazardous to the aquatic environment - chronic
AS/NZS: Australian Standards/New Zealand Standards
ATE: Acute toxicity estimate
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EC50: Effective Concentration 50%
EL50: Effective loading rate 50%
EN: European Standard
EQ: Excepted quantities
EU: European Union
Flam. Liq.: Flammable liquid
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50: Inhibition Concentration 50%
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
M-factor: Multiplication factor
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.: Reproductive toxicity
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
SVHC: Substance of very high concern
TRGS: Technical Rules for Hazardous Substances
vPvB: Very persistent and very bioaccumulative

Reason of change: General revision
Date of first version: 23/10/2012

Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.