

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 1 of 9

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

KAESER Sigma Fluid S-460

Further trade names

SIGMA S-460 Synthetic Air Compressor Fluid (Sigma Lubricants S-460), 9.5409.0, 9.5409.00010, 9.5409.00020, 9.5409.00030, 9.5409.00040, 9.5409.00050, 9.5409.00060, 9.5409.00070, 9.5409.00080, 9.5409.00090

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

cooling lubricant for rotary screw compressor.

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet**Supplier**

Company name: KAESER Kompressoren SE

Street: Carl- Kaeser- Strasse 26

Place: D-96450 Coburg

Telephone: +49(0)9561/640-0

Responsible Department: sdb.de@kaeser.com

1.4. Emergency telephone number:

Giftinformationszentrum Nord Goettingen + 49 (0) 551 19240 (Poison Information Centre Goettingen)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

This mixture is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

2.2. Label elements**Regulation (EC) No. 1272/2008****Special labelling of certain mixtures**

11,7 % of the mixture consists of ingredient(s) of unknown acute toxicity (inhalation).

Contains 6,2 % of components with unknown hazards to the aquatic environment.

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Chemical characterization**

The product does not contain dangerous substances according to REGULATION (EU) No. 2020/878, Annex II, Part A , 3.1/3.2. that must be mentioned in Chapter 3.

Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

SECTION 4: First aid measures**4.1. Description of first aid measures**

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 2 of 9

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of accident by inhalation:

Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. When in doubt or if symptoms are observed, get medical advice.

After contact with skin

Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of skin irritation, consult a physician.

After contact with eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. When in doubt or if symptoms are observed, get medical advice.

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

After eye contact: No risks worthy of mention.

Inhalation: No risks worthy of mention.

Skin contact: No risks worthy of mention.

ingestion.: No risks worthy of mention.

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**

In case of fire:

Carbon dioxide (CO₂)

Dry extinguishing powder

Foam

In case of major fire and large quantities:

Water spray jet

Unsuitable extinguishing media

High power water jet

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Carbon dioxide (CO₂). Carbon monoxide. Nitrogen oxides (NO_x). Sulfur oxides.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. In case of fire and/or explosion do not breathe fumes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray jet to protect personnel and to cool endangered containers.

Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 3 of 9

General measures

Avoid contact with skin, eyes and clothes.

For non-emergency personnel

Wear personal protection equipment (refer to section 8).

For emergency responders

No special precautionary measures are necessary.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers).
Cover drains.

6.3. Methods and material for containment and cleaning up**For containment**

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Treat the recovered material as prescribed in the section on waste disposal.

For cleaning up

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Do not breathe vapour/aerosol. Avoid contact with skin, eyes and clothes.
Wear personal protection equipment (refer to section 8).

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

Advices on general occupational hygiene: See section 8.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed and in a well-ventilated place.
Keep only in original container.
Make sure spills can be contained, e.g. in sump pallets or kerbed areas.
Suitable material for Container: Steel. Polyethylene (HDPE).
Unsuitable materials for Container: PVC (Polyvinyl chloride).

Hints on joint storage

Do not store together with: Gas. Explosive hazardous substances. Oxidising substances (solid). Oxidising substances (liquid). Radioactive substances. Infectious substances.
Keep away from food, drink and animal feedingstuffs.

Further information on storage conditions

Protect against: UV-radiation/sunlight. Heat.

7.3. Specific end use(s)

refer to section 1.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 4 of 9

Additional advice on limit values

Air limit values:

Possibility of exposure to Aerosol (Mineral oil)

Limit value (TLV-TWA) = 5 mg/m³ - Source: ACGIHLimit value (TLV-STEL) = 10 mg/m³ - Source: ACGIH

STEL: short-term exposure limits

TLV: Threshold Limiting Value

TWA: time weighted average

ACGIH: American Conference of Governmental Industrial Hygienists

Recommended monitoring procedures:

DIN-/EN-Norms: EN 689, EN 14042, EN 482

8.2. Exposure controls**Appropriate engineering controls**

Vapours / aerosols should be extracted by suction directly at point of origin.

Protective and hygiene measures

Always close containers tightly after the removal of product. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Take off contaminated clothing.

Do not put any product-impregnated cleaning rags into your trouser pockets.

Eye/face protection

Recommended eye protection articles: Eye glasses with side protection. BS/EN 166

Hand protection

In case of prolonged or frequently repeated skin contact: Wear suitable gloves. BS EN 374

Suitable material: NBR (Nitrile rubber). CR (polychloroprene, chloroprene rubber)

Thickness of the glove material: 0,35 mm

Breakthrough time > 480 min.

Check leak tightness/impermeability prior to use. Breakthrough times and swelling properties of the material must be taken into consideration.

Skin protection

Protective clothing.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

Generation/formation of aerosols

Recommended respiratory protection articles: Combination filtering device (EN 14387). Type: AP-2/3

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment.

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 5 of 9

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state: Liquid
Colour: Golden
Odour: Characteristic

pH-Value:

Test result	Test method
Not determined	Not applicable

Changes in the physical state

Melting point:

Not determined Not applicable

Boiling point or initial boiling point and boiling range:

>371 °C Not known

Pour point:

-27 °C Not known

Flash point:

251 °C Open Cup [Cleveland]

Sustaining combustion:

No data available Not applicable

Flammability

Solid/liquid:

Not applicable

Gas:

Not applicable

Explosive properties

none

Lower explosion limits:

Not determined

Upper explosion limits:

Not determined

Auto-ignition temperature:

Not determined Not applicable

Self-ignition temperature

Gas:

Not determined

Decomposition temperature:

Not determined Not applicable

Oxidizing properties

none

Vapour pressure:
(at 25 °C)

< 0,1 hPa Not known

Vapour pressure:

Density (at 15 °C):

0,86 g/cm³ Not known

Bulk density:

The product has not been tested. Not applicable

Water solubility:

Immiscible Not applicable

Solubility in other solvents

Not determined

Partition coefficient n-octanol/water:

The product has not been tested.

Viscosity / dynamic:
(at 100 °C)

6,1 mPa·s calculated

Viscosity / kinematic:
(at 40 °C)45-51 mm²/s Not known

Flow time:

Not determined Not applicable

Relative vapour density:

Not determined Not applicable

Evaporation rate:

Not determined Not applicable

Solvent separation test:

Not determined

Solvent content:

Not determined

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 6 of 9

9.2. Other information

Solid content:

Not determined

Auto-ignition temperature: Not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

Reacts with : Oxidizing agents, strong.

10.4. Conditions to avoid

UV-radiation/sunlight. Heat

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition productsCan be released in case of fire: Carbon dioxide (CO₂). Carbon monoxide. Nitrogen oxides (NO_x). Sulfur oxides.**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Toxicocinetics, metabolism and distribution**

No information available.

Acute toxicity

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

Irritation and corrosivity

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

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Specific effects in experiment on an animal

There are no data available on the preparation/mixture itself.

11.2. Information on other hazards**Endocrine disrupting properties**

No information available.

SECTION 12: Ecological information**12.1. Toxicity**

The product has not been tested.

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 7 of 9

12.2. Persistence and degradability

Due to its low solubility in water the product is almost completely mechanically separated in biological sewage plants.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

No information available.

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. According to (EWC) European Waste Catalogue, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process. Waste codes/waste designations according to (EWC) European Waste Catalogue.

List of Wastes Code - residues/unused products

130206 OIL WASTES AND WASTES OF LIQUID FUELS (EXCEPT EDIBLE OILS, AND THOSE IN CHAPTERS 05, 12 AND 19); waste engine, gear and lubricating oils; synthetic engine, gear and lubricating oils; hazardous waste

List of Wastes Code - used product

130206 OIL WASTES AND WASTES OF LIQUID FUELS (EXCEPT EDIBLE OILS, AND THOSE IN CHAPTERS 05, 12 AND 19); waste engine, gear and lubricating oils; synthetic engine, gear and lubricating oils; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information**Land transport (ADR/RID)****14.1. UN number:**

No dangerous good in sense of these transport regulations.

14.2. UN proper shipping name:

No dangerous good in sense of these transport regulations.

14.3. Transport hazard class(es):

No dangerous good in sense of these transport regulations.

14.4. Packing group:

No dangerous good in sense of these transport regulations.

Inland waterways transport (ADN)**14.1. UN number:**

No dangerous good in sense of these transport regulations.

14.2. UN proper shipping name:

No dangerous good in sense of these transport regulations.

14.3. Transport hazard class(es):

No dangerous good in sense of these transport regulations.

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 8 of 9

14.4. Packing group:

No dangerous good in sense of these transport regulations.

Marine transport (IMDG)**14.1. UN number:**

No dangerous good in sense of these transport regulations.

14.2. UN proper shipping name:

No dangerous good in sense of these transport regulations.

14.3. Transport hazard class(es):

No dangerous good in sense of these transport regulations.

14.4. Packing group:

-

Air transport (ICAO-TI/IATA-DGR)**14.1. UN number:**

No dangerous good in sense of these transport regulations.

14.2. UN proper shipping name:

No dangerous good in sense of these transport regulations.

14.3. Transport hazard class(es):

No dangerous good in sense of these transport regulations.

14.4. Packing group:

-

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

See section 8.

14.7. Maritime transport in bulk according to IMO instruments

Not relevant

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

2010/75/EU (VOC): Not determined

2004/42/EC (VOC): Not determined

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

Additional information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (amended by Regulation (EU) No 2020/878)

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

REACH 1907/2006 appendix XVII: Not relevant (Mixtures)

National regulatory information

Water hazard class (D): 2 - obviously hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

SECTION 16: Other information**Changes**

Rev. 19.00; 01.06.2015, Initial release

Rev. 20.00; 29.11.2017, Changes in chapter: 2, 3, 4, 7, 9, 10, 11, 12, 15, 16

Rev. 21.00; 20.08.2019, Changes in chapter: 2, 3, 9, 11, 12, 15, 16

Rev. 22.00; 06.04.2021, Changes in chapter: 3, 4, 6, 11, 12, 15, 16

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

CAS: Chemical Abstracts Service

CLP: Classification, Labelling and Packaging of substances and mixtures

DNEL: Derived No Effect Level

d: day(s)

KAESER Sigma Fluid S-460

Revision date: 06.04.2021

Page 9 of 9

EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
ECHA: European Chemicals Agency
EWC: European Waste Catalogue
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
h: hour
LOAEL: Lowest observed adverse effect level
LOAEC: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect concentration
NLP: No-Longer Polymers
N/A: not applicable
OECD: Organisation for Economic Co-operation and Development
PNEC: predicted no effect concentration
PBT: Persistent bioaccumulative toxic
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail
REACH: Registration, Evaluation, Authorisation of Chemicals
SVHC: substance of very high concern
TRGS: Technische Regeln für Gefahrstoffe
UN: United Nations
VOC: Volatile Organic Compounds

Further Information

Classification according to Regulation (EC) No 1272/2008 [CLP] - Classification procedure:

Health hazards: Calculation method.

Environmental hazards: Calculation method.

Physical hazards: On basis of test data and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)