Kao Corporation

GLOBAL PRODUCT STRATEGY SAFETY SUMMARY

RHEODOL MS-50

This document is a high-level summary that provides usage of chemical substances and safety information to the general public. It is not intended to replace the Safety Data Sheet, which is available from suppliers and should be referred to for full details of recommended safety procedures for each type of use. It is not intended to replace or supersede manufacturers' instructions and warnings for their consumer products containing this substance.

1. Substance Identity

Brand Name: RHEODOL MS-50

Chemical Name: Glycerol monostearate

CAS Number: 31566-31-1

2. Uses and Applications

RHEODOL MS-50 is a nonionic surfactant.
For the industrial use, RHEODOL MS-50 is mainly used as an emulsifiers for pharmaceuticals and cosmetics.

3. Physical/Chemical Properties

RHEODOL MS-50 has no identified physicochemical hazards.

Property	Value
Physical state	Solid
Color	White
Odor	Slight characteristic odor
pH	7.9 (1% suspension (IPA/Water=10/1))
Density	0.9029 g/mL (70°C / 158°F) 0.8945 g/mL (80°C / 176°F) 0.886 g/mL (90°C / 194°F)
Melting point	60°C / 140°F

Boiling point	> 40°C / 104°F
Flash point	236°C / 457°F (Cleveland open cup method)
Flammability	No information available
Explosive properties	No information available
Self – ignition temperature	No information available
Vapour pressure	No information available
Water solubility	Insoluble in water
Octanol-water partition coefficient (log K_{ow})	No information available
Viscosity	36 mPa·s (70°C / 158°F) 26 mPa·s (80°C / 176°F) 18.5 mPa·s (90°C / 194°F)

4. Human Health Safety Assessment

Consumer: There is no exposure to hazardous concentration levels of RHEODOL MS-50.
Worker: Based on available data, repeated exposure associated with handling operations with RHEODOL MS-50 does not cause any toxic effects.

Effect Assessment	**Result**
Acute Toxicity Oral/ dermal	No acute toxicity after oral/ dermal exposure in practical use. The substance does not cause damage to any organs following single exposure.
Irritation Skin/ eye	Based on the available data, unlikely to cause irritation to skin/eye
Sensitization	Based on the available data, unlikely to cause allergic skin reaction.
Toxicity after repeated exposure	Unlikely to cause any toxic effects through prolonged or repeated oral exposure in practical use.
Mutagenicity	Based on the available data, unlikely to cause genetic defects.
Carcinogenicity	Based on the available data, unlikely to cause cancer.
Toxicity for reproduction	Based on the available data, unlikely to be damaging to fertility or the unborn child.

5. Environmental Safety Assessment

The test results with fish, aquatic invertebrates and algae suggest that RHEODOL MS-50 is considered unlikely to cause toxicity to aquatic organisms. Furthermore, it is readily biodegradable and is therefore not expected to persist in the environment. Since it does not bioaccumulate in the food chain, suggesting low impact in real-world environments.

Effect Assessment	Result
Aquatic Toxicity	It is considered unlikely to cause toxicity to aquatic organisms.
Biodegradation	Readily biodegradable.
PBT/vPvB conclusion	Not persistent in the environment, not bioaccumulating in organisms and not toxic nor very persistent and very bioaccumulating.

6. Exposure

Consumer

Consumers may be exposed to this substance through the use of pharmaceuticals and cosmetics; however, the concentration of RHEODOL MS-50 in this application is considered unlikely to pose a risk of adverse effects.

Worker

The exposure can occur either in RHEODOL MS-50 manufacturing facilities or in the various industrial facilities when RHEODOL MS-50 is used. Those workers in industrial operations during maintenance, sampling, testing, or other procedures could be exposed to RHEODOL MS-50. Only qualified and trained workers handle the undiluted substance. The manufacturing facilities offer a thorough training program for employees and appropriate work processes, as well as safety equipment (goggles and gloves) in place to prevent an unnecessary exposure. Safety showers and eye-wash stations are accessible nearby. Workers are required to be trained in accordance with the safety measures in the Safety Data Sheet.

Environment

Since RHEODOL MS-50 is used extensively, it is discharged to wastewater treatment facilities from industrial sites such as manufacturing, preparation, handling, storage and use of the substance as well as from consumer households. However, the substance is readily biodegradable, so it is removed efficiently in wastewater treatment facilities. The substance is biologically degraded in the surface water and is rapidly removed even if trace amounts of the substance remain in wastewater. Furthermore, the substance does not accumulate in the food chain, so that there is no concern of human exposure through environmental pathway.

7. Risk management recommendations

Adequate ventilation should be provided when RHEODOL MS-50 is used in manufacturing facilities or in the various industrial facilities. Always use appropriate chemical-resistant gloves to protect your hands and skin and always wear eye protection equipment. Wash hands and skin after contact with the substance. Do not eat, drink or smoke where the substance is handled, processed or stored. If this substance gets on your clothing, take off the contaminated clothes. When the substance attaches to skin (or hair), wash with a large amount of water and soap. When it causes skin irritation, seek medical advice/attention. If the substance gets into your eyes, rinse your eyes thoroughly for several minutes. If you wear

contact lenses, and you can take them off easily, take them off and continue to rinse your eyes. If eye irritation persists, get medical advice/attention.

Wastewater containing the substance must be passed through wastewater treatment facilities in order to remove the substance. No specific measures are needed, because it is not expected to be released into the air.

8. Regulatory Information / Classification and Labeling

Under GHS classification chemical substances are classified in hazards for physical properties, human health and environment. The hazard information for industrial products is transmitted via specific labels and Safety Data Sheet. GHS offers the standardization for hazard communication. The subjects who could be assumed to be exposed to the substance, workers, consumers, transport workers, and emergency responders, can better understand the hazards of the chemicals in use through the transmission.

Labeling according to UN GHS

UN GHS is the basis for country specific GHS labeling.

RHEODOL MS-50 may be assigned to the following GHS classification.

Classification and Labeling Information

None

Hazard Statements:

None

Signal Word

None

The laws of manufacturing, sale, transport, use and disposal are different among countries or areas. Details are referred to the Safety Data Sheet provided by the supplier.

9. Conclusion

RHEODOL MS-50 is considered unlikely to cause toxicity to aquatic organisms. RHEODOL MS-50 is considered a low risk to the environment because it is readily biodegradable and does not persist in the environment. RHEODOL MS-50 is not applicable to PBT/vPvB. Repeated exposure during handling of RHEODOL MS-50 is not expected to cause toxic effects; however, workers should follow the standard safety measures and refer to the Safety Data Sheet. Consumers will usually not come into contact with the substance in bulk, and because it is used in diluted form in consumer products, RHEODOL MS-50 is considered to have low concern for adverse effects on human health.

10. Contact information within company

For further information on this substance or product safety summaries in general, please contact:

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Additional information can be found at a chemical risk assessment support portal provided by the Japan Chemical Industry Associations, found at https://www.jcia-bigdr.jp/jcia-bigdr/en/top.

11. Glossary

Acute Toxicity	Adverse effects that result from a single exposure
Sensitization	Inducibility of allergy
Genotoxicity	Effects to induce gene mutations
Carcinogenicity	Action influence to cause a cancer
Toxicity for Reproduction	Adverse effects for teratogenicity, embryotoxicity, and reproductivity
Biodegradation	Biological degradation of a substance in environments
PBT (Persistent, Bioaccumulative and Toxic)	Substances that are environmentally persistent, bioaccumulative, and toxic
vPvB (Very Persistent and Very Bioaccumulative)	Substances with high persistence in the environment and high accumulation in ecology
GHS	Globally Harmonized System of Classification and Labelling of Chemicals

12. Date of issue

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