Kao Corporation

Enriching lives,
in harmony with nature.

GLOBAL PRODUCT STRATEGY SAFETY SUMMARY

MIGHTY AE-03

This document is a high-level summary intended to provide the general public with an overview of product safety for this substance. 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 manufacturer's instructions and warnings for their consumer products containing this substance.

1. Substance Identity

Brand Name: MIGHTY AE-03

Chemical Name: Sodium polyoxyethylene alkyl ethers sulfates (Main component)

CAS Number: Confidential

2. Uses and Applications

MIGHTY AE-03 is an anionic surfactant. It is used mainly as admixture for raw concrete.

3. Physical/Chemical Properties

MIGHTY AE-03 has no identified physicochemical hazards.

Property	Value
Physical state	Liquid
Colour	Light yellow clear
Odour	Almost odourless
pH	7 (Undiluted solution)
Density	1.020 g/mL (10 ℃) (50 °F) 1.018 g/mL (20 ℃) (68 °F) 1.016 g/mL (30 ℃) (86 °F)
Melting point	No information available

Boiling point	No information available
Flash point	Not applicable
Flammability	No information available
Explosive properties	No information available
Self – ignition temperature	No information available
Vapour pressure	No information available
Water solubility	Soluble
Octanol-water partition coefficient (log K_{ow})	No information available
Viscosity	No information available

4. Human Health Safety Assessment

Undiluted solution of MIGHTY AE-03 causes serious eye damage.

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	Unlikely to cause skin irritation Undiluted substance causes serious eye damage
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 MIGHTY AE-03 could cause a harmful effect to aquatic organisms. However, MIGHTY AE-03 is unlikely to persist in the environment because of showing the readily biodegradation. EULGEN 105 does not bioaccumulate in the food chain.

Effect Assessment	Result
Aquatic Toxicity	Based on the available data, likely to cause a harmful effect for aquatic organisms

Effect Assessment	Result
Biodegradation	Readily biodegradable
PBT/ vPvB conclusion*	Not persistent in the environment, not bioaccumulating in organisms and not toxic nor very persistent and very bioaccumulating

*PBT=Persistent, Bioaccumulative and Toxic
vPvB=Very Persistent and Very Bioaccumulative

6. Exposure

Consumer

MIGHTY AE-03 is used mainly as admixture for raw concrete. MIGHTY AE-03 is hardly eluted from concrete, it is considered that exposure to consumers hardly occurs.

Worker

The exposure can occur either in MIGHTY AE-03 manufacturing facilities or in the various industrial facilities when MIGHTY AE-03 is used. Those workers in industrial operations during maintenance, sampling, testing, or other procedures could be exposed with MIGHTY AE-03. Only qualified and trained workers handle the undiluted substance. The manufacturing facilities offer thorough training program for employees and appropriate work processes, as well as safety equipment (goggles and gloves) in place to present 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

MIGHTY AE-03 is hardly eluted from concrete. It is discharged to waste water treatment plants from industrial sites such as manufacturing, preparation, handling, storage and use of MIGHTY AE-03. However, the substance is readily biodegradable, so that it is removed efficiently in waste water treatment plants. The substance is biologically degraded in the surface water and is rapidly removed even if it is remained slightly in the waste water. Hence, the chronic exposure to aquatic organisms of the substance is unlikely to occur. 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

When you use the substance, make sure to be measured the adequate ventilation. Always use appropriate chemical-resistant gloves to protect your hands and skin and always wear eye protection equipment. Do not eat, drink or smoke where the substance is handled, processed or stored. Wash hands and skin after contact with the substance. When the substance attaches to skin (or hair), take off the contaminated clothes. Wash with a large amount of water and soap. When it causes your skin irritation, consult doctor (medical diagnosis/therapy). If the substance gets into your eyes, rinse your eyes thoroughly for several minutes. If you wear contact lens, and you can take it off easily, take it off and continue to rinse your eyes. Contact to a doctor immediately.

Waste water containing the substance must be passed the waste water treatment plants 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 Labelling

Under GHS classification chemical substances are classified in hazards for physical properties, human health and environment. The hazard information for industrial products are 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.

MIGHTY AE-03 may be assigned to following GHS classification.

Classification and Labeling Information

Eye Dam. 1

Aquatic Acute 3

Hazard Statements:

H318: Causes serious eye damage

H402: Harmful to aquatic life

Signal Word

Danger

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

9. Conclusion

Though MIGHTY AE-03 is suggested to cause a harmful effect to aquatic organisms, there is no concern to the environmental organisms due to the rapid biodegradation of MIGHTY AE-03. In the PBT/vPvB assessments for MIGHTY AE-03, the substance is not applicable to PBT/vPvB. Contact with the undiluted MIGHTY AE-03 may cause serious eye damage. When handling the substance, workers should follow the standard safety measures and refer to the Safety Data Sheet. Consumers will usually not come into contact with the substance, therefore, it is considered that MIGHTY AE-03 gives rise no hazardous effects to 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 the International Council of Chemical Associations portal, found at http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/.

11. Glossary

Hazard	Hazardous property for human health or environments
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
Acute Toxicity	Adverse effects that result from a single exposure
Sensitization	Inducibility of allergy
Mutagenicity	Effects to induce gene mutations
Toxicity after repeated exposure	Adverse effects that result from repeated exposure
Toxicity for reproduction	Adverse effects for teratogenicity, embryotoxicity, and reproductivity
Carcinogenicity	Action influence to cause a cancer
Biodegradation	Biological degradation of a substance in environments
Bioaccumulation	Accumulation of substances in environments

12. Date of issue

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