

GLOBAL PRODUCT STRATEGY SAFETY SUMMARY

EMULGEN 104P

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: EMULGEN 104P
Chemical Name: Polyoxyethylene (4) lauryl ether
CAS Number: 9002-92-0

2. Uses and Applications

EMULGEN 104P is a non-ionic surfactant. It is used as an emulsifier and a stabilizer for cosmetic products and others due to its high emulsifying properties.

For industrial use, EMULGEN 104P is mainly used as an emulsifier, to control emulsion polymerization, as a paint additive, and for other applications.

3. Physical/Chemical Properties

EMULGEN 104P has no identified physicochemical hazards.

| Property | Value |
|----------------|----------------------------|
| Physical state | Liquid |
| Color | Colorless to pale yellow |
| Odor | Characteristic odor |
| pH | 5 - 7.5 (5% solution) |
| Density | 0.939 g/mL (30 °C / 86 °F) |

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| | 0.931 g/mL (40 °C / 104 °F) 0.924 g/mL (50 °C / 122 °F) |
| Freezing point | 16 °C / 61 °F |
| Boiling point | No information available |
| Flash point | 186 °C / 367 °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 | Emulsifiable |
| Octanol-water partition coefficient (log K _{ow}) | No information available |
| Viscosity | 40 mPa·s (30 °C / 86 °F) 20 mPa·s (40 °C / 104 °F) 15 mPa·s (50 °C / 122 °F) |

4. Human Health Safety Assessment

Consumer: There is no exposure to hazardous concentration levels of EMULGEN 104P.
Worker: Based on available data, repeated exposure associated with handling operations with EMULGEN 104P 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 skin irritation. Undiluted substance causes serious eye irritation. |
| 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 EMULGEN 104P could cause a strong toxicity to aquatic organisms. It also could cause harmfulness to aquatic organisms with long lasting effects. However, EMULGEN 104P is considered a low risk to the environment because it is readily biodegradable and does not persist in the environment. EMULGEN 104P does not bioaccumulate in the food chain.

| Effect Assessment | Result |
|---------------------|--|
| Aquatic Toxicity | Based on the available data, likely to cause a strong toxicity to aquatic organisms and harmful to aquatic life with long lasting effects. |
| 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 come into contact with EMULGEN 104P through the use of cosmetic products, but the concentration in these products is below levels likely to cause adverse effects of concern. When products are used as recommended, consumers should always read the product information and follow the label or instructions.

Worker

The exposure can occur either in EMULGEN 104P manufacturing facilities or in the various industrial facilities when EMULGEN 104P is used. Those workers in industrial operations during maintenance, sampling, testing, or other procedures could be exposed to EMULGEN 104P. 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 EMULGEN 104P 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. Hence, the chronic exposure to aquatic organisms of the substance is unlikely to occur. Furthermore, the substance does not accumulate by the food chain, and there is no concern to human health by the exposure of the substance through environmental pathway.

7. Risk management recommendations

Adequate ventilation should be provided when EMULGEN 104P 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. If 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 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 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.

EMULGEN 104P may be assigned to the following GHS classification.



Classification and Labeling Information

Eye Dam. 2

Aquatic Acute 1

Aquatic Chronic 3

Hazard Statements:

H319: Causes serious eye irritation

H400: Very toxic to aquatic life

H412: Harmful to aquatic life with long lasting effects

Signal Word

Warning

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

EMULGEN 104P could cause a strong toxicity to aquatic organisms and harmfulness to aquatic organisms with long lasting effects. However, EMULGEN 104P is considered a low

risk to the environment because it is readily biodegradable and does not persist in the environment. EMULGEN 104P is not applicable to PBT/vPvB. Contact with the undiluted substance causes serious eye irritation. 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 in bulk, and because it is used in diluted form in consumer products, EMULGEN 104P 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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|------------------|--|
| Name | Kao Corporation, Global Chemical Business |
| Telephone number | +81-3-5630-7700 |
| Fax number | +81-3-5630-7889 |
| E-mail address | chemical@kao.co.jp |

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

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| 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

July 14, 2025 Revised