

GLOBAL PRODUCT STRATEGY SAFETY SUMMARY

AMPHITOL 20N

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: AMPHITOL 20N

Chemical Name: Lauryldimethylamine oxide (Main component)

CAS Number: 1643-20-5 (Main component)

2. Uses and Applications

AMPHITOL 20N is an amphoteric surfactant. It is used in a detergent and body cleansing agent and others.

For the industrial use, AMPHITOL 20N is mainly used as aqueous cleaner, emulsifier, and others.

3. Physical/Chemical Properties

AMPHITOL 20N has no identified physicochemical hazards.

| Property | Value |
|----------------|-------------------------------|
| Physical state | Liquid |
| Colour | Pale yellow clear |
| Odour | Slightly characteristic odour |
| pH | 7.5 (5 % solution) |

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| Density | 0.969 g/mL (20 °C) (68 °F) 0.959 g/mL (40 °C) (104 °F) 0.947 g/mL (60 °C) (140 °F) |
| Melting point | -2.5 °C (27.5 °F) |
| 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 | 50 mPa · s (20 °C) (68 °F) 60 mPa · s (40 °C) (104 °F) 90 mPa · s (60 °C) (140 °F) |

4. Human Health Safety Assessment

Consumer: The exposure to AMPHITOL 20N is at safe levels.

Worker: The repeated exposure of AMPHITOL 20N 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 | Undiluted substance causes skin irritation 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 AMPHITOL 20N could cause strong toxicity to aquatic organisms and toxic to aquatic life with long lasting effects. However, AMPHITOL 20N is unlikely to persist in the environment because of showing the readily biodegradation. AMPHITOL 20N is unlikely to cause bioaccumulation by the food chain, because AMPHITOL 20N is not PBT/ vPvB.

| Effect Assessment | Result |
|-----------------------|--|
| Aquatic Toxicity | Based on the available data, likely to cause strong toxicity to aquatic organism and toxic 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 |

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

6. Exposure

Consumer

The consumer can come into contact with the substance in use of the detergent, the body cleansing agent and others, but the concentration of AMPHITOL 20N in use is below the level which would give rise harmful effects of concern. When it's used as the recommended use, consumer should always read product information before use and follow the label/ use instructions.

Worker

The exposure can occur either in AMPHITOL 20N manufacturing facilities or in the various industrial facilities when AMPHITOL 20N is used. Those workers in industrial operations during maintenance, sampling, testing, or other procedures could be exposed with AMPHITOL 20N. 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

Since this substance is used extensively, it is discharged to waste water treatment plants 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 that it is removed efficiently in waste water treatment plants. The substance is biologically degraded in the surface water even if it 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 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

When you use the substance, make sure to be measured the adequate ventilation. Always wear appropriate 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. Wash hands and skin with a large amounts of water and soap, when the substance attaches to skin (or hair), take off the contaminated clothes. When it causes your skin irritation, seek medical advice/attention. 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.

AMPHITOL 20N may be assigned to following GHS classification.



Classification and Labeling Information

Skin Irrit. 2

Eye Dam. 1

Aquatic Acute 1

Aquatic Chronic 2

Hazard Statements:

H315: Causes skin irritation

H318: Causes serious eye damage

H400: Very toxic to aquatic life

H411: Toxic to aquatic life with long lasting effects

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 AMPHITOL 20N is suggested to cause a strong toxicity to aquatic organisms and toxic to aquatic life with long lasting effects, there is no concern to the environmental organisms due to the rapid biodegradation of AMPHITOL 20N. In the PBT/vPvB assessments for AMPHITOL 20N, the substance is not PBT/vPvB. Contact with the undiluted AMPHITOL 20N may cause irritation to the skin and serious damage to the eyes. 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 bulk and the substance is used diluted products, therefore, it is considered that AMPHITOL 20N 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

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

12. Date of issue

Dec. 14, 2017