

## GLOBAL PRODUCT STRATEGY SAFETY SUMMARY

### FARMIN DM2471

*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: FARMIN DM2471

Chemical Name: Amines, C12-16-alkyldimethyl

CAS Number: 68439-70-3

#### 2. Uses and Applications

FARMIN DM2471 has a variety of different uses including use in the manufacture of amine oxides used as surfactants. Additionally the substance is used in the manufacture of benzalkonium salts to be used in biocide applications.

The substance is not sold to consumers and use is limited to Industrial use only. Workers handling this substance should have the appropriate skills and training with self-protect apparatus.

#### 3. Physical/chemical properties

FARMIN DM2471 is a clear colourless liquid with a characteristic fatty amine odour and is insoluble in water.

Property	Value
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Physical state	Liquid
Colour	Colourless
Odour	Characteristic (fatty amine)
pH	No information available
Density	0.790 g/mL at 20 °C
Melting point	- 8.9 °C
Boiling point	No information available
Flash point	136 °C (Cleveland open cup method)
Flammability (Optional)	No information available
Explosive properties	No information available
Self – ignition temperature	No information available
Vapour pressure	No information available
Water solubility	Insoluble
Octanol-water partition coefficient (log K <sub>ow</sub> )	No information available

#### 4. Health information

Farmin DM2471 is an alkylamine which is classified as harmful if swallowed. Information on other dimethylalkyl amines suggests that this substance will cause severe burns when in contact with the skin and serious eye damage if in contact with the eyes.

Consumer exposure is very unlikely as the substance is manufactured and handled in industrial settings in closed systems (used as chemical intermediate). Consumers will not come into contact with harmful levels of the substance as use in consumer end-products is not foreseen.

Workers will not come into contact with this substance as it is manufactured and handled in industrial settings in closed systems. Moreover, the vapour pressure of the substance is low and therefore the exposure via inhalation will be limited. In case of unintended exposure during maintenance, sampling, testing, or other procedures workers should follow the recommended safety measures in the Safety Data Sheet (SDS).

Effect assessment	Result (REACH assessment)
Acute toxicity Oral / inhalation / dermal	Harmful by the oral route. Not considered as harmful by dermal or inhalation routes of exposure.
Irritation / corrosion Skin / eye / respiratory tract	Causes severe skin burns. Causes skin irritation and eye irritation.
Toxicity after repeated exposure Oral / inhalation / dermal	No information available.
Genotoxicity / Mutagenicity	Not mutagenic.
Carcinogenicity	No information available.
Toxicity for reproduction	No information available.

## 5. Environmental information

FARMIN DM2471 is very toxic to aquatic organism and considered very hazardous to the aquatic environment. The substance is readily biodegradable, will not persist in the environment and has a low potential of bioaccumulation. Adsorption potential of the substance is high and it is likely to bind to soil and suspended particles.

The amount of the substance released into the aquatic and terrestrial environment, however, is low indicating no risk for the aquatic and terrestrial environment. This is confirmed by an environmental exposure assessment showing that exposure can be minimised during all steps of manufacture and industrial use.

Effect assessment	Result (REACH assessment)
Aquatic toxicity	Very toxic to aquatic organisms. EC50 is <1 mg/L in fish, daphnia and algae.
Biodegradation	Readily biodegradable
Bioaccumulation potential	BCF values estimated to be below 2000.
PBT / vPvB  (Persistent, Bioaccumulative and Toxic / Very Persistent and Very Bioaccumulative)	Not considered to be either PBT nor vPvB.

## **6. Exposure potential**

### Human health

FARMIN DM2471 is a raw material used in the production of amine oxide surfactants. Additionally the substance is used in the manufacture of benzalkonium salts to be used in biocide applications. Therefore exposure will only occur in an industrial setting to workers. Consumers will not be exposed to this material. Exposure of workers in manufacturing facilities is also considered very low because the process, storage and handling operations are under strictly controlled conditions. The substance is rigorously contained in a closed system by technical means during its whole life cycle. It is transported to another reactor or storage tank using closed transfer pipes. Workers who might accidentally come in contact with the non-formulated, undiluted substance should follow the safety measures recommended in the Safety Data Sheet (SDS).

### Environment

Manufacture of chemicals involving FARMIN DM2471 is a closed and automated process with no aqueous effluent and no gaseous emissions released to the environment. During the industrial use of the substance there is also a “No release” policy with all effluent being stored in special containers dedicated to incineration.

## **7. Risk management recommendations**

When using chemicals make sure that there is adequate ventilation. Always use appropriate chemical resistant gloves to protect your hands and skin and always wear eye protection. FARMIN DM2471 is corrosive to the skin and causes serious eye damage so alkali-resistant gloves and safety goggles or face shield should be worn. Appropriate clothing should be worn also. Do not eat, drink, or smoke where chemicals are handled, processed, or stored. If this material gets on clothing take off immediately all contaminated clothing. If you have inhaled this substance, move to fresh air and keep comfortable for breathing. If swallowed this substance, seek medical attention if you feel unwell. Do not induce vomiting. If this substance gets into your eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If this substance gets on your skin, wash the skin with 2% acetic acid and plenty of water until slimy feeling disappears. Seek medical attention immediately.

## **8. Regulatory information / Classification and labelling**

Under GHS, substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the Safety Data Sheet. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers and emergency responders) can better understand the hazards of the chemicals in use.

FARMIN DM2471 classification and labelling:

H302 Acute Toxicity (Oral)	- Category 4
H314 Skin Corrosion / Irritation	- Category 1B
H318 Serious Eye Damage / Eye Irritation	- Category 1
H400 Aquatic Hazard (Acute)	- Category 1
H410 Aquatic Hazard (Long-Term)	- Category 1



Signal Word: Danger

Regulations relating to the manufacture, sale, transport, use and disposal will vary depending on country or region. Please consult the safety data sheet provided by the supplier for full details.

## 9. Conclusion

FARMIN DM2471 is used under controlled conditions at industrial sites. The manufacturing and use of FARMIN DM2471 does not pose a risk to humans or the environment if instructions in the Safety Data Sheet are followed.

## 10. Contact information within company

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

Name	Kao Corporation, Global Chemical Business
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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

Acute toxicity	Harmful effects after single exposure
Biodegradation	Loss or transformation of a chemical by microorganisms
Bioaccumulation	Accumulation of substances in the aquatic organisms
Carcinogenicity	Effects causing cancer
Chronic toxicity	Harmful effects after repeated exposures
GHS	Global Harmonized System
Hazard	Danger or causing damage to human health or environment
Mutagenicity	Effect that changes genes
Reprotoxicity	Combining teratogenicity, embryotoxicity and harmful effects on fertility
Sensitising	Allergenic

## 12. Date of issue

February 12 2014