Benzenesulfonic acid, mono-C10-13-alkyl derivs., compds. with ethanolamine (MEA-LAS)

This Product Safety Summary is intended to provide a general overview of the chemical substance in the context of ICCA Global Product Strategy. The information in the Summary is basic information and is not intended to provide emergency response, medical or treatment information.

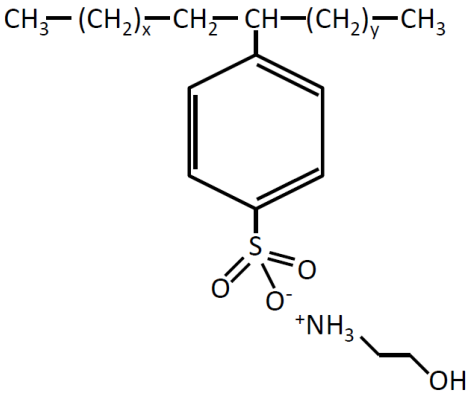
1. Chemical Identity

Chemical names (IUPAC): Benzenesulfonic acid, mono-C10-13-alkyl derivs., compds. with ethanolamine (MEA-LAS)

CAS number(s): 85480-55-3

Molecular formula: CxHySO4N, where x = 17-22, y = 31-41, y = 2x-3

Structure:



2. Use and Applications

MEA-LAS is used as a surfactant in heavy-duty liquid and powder laundry detergents, all-purpose cleaners and industrial cleaners. The following P&G relevant use was submitted for registration under REACH:

- Production of concentrated laundry detergents.

3. Physical/Chemical Properties

Phys/Chem Safety Assessment:

Property	Value
Form	Paste
Physical state	Solid
Colour	Light brown
Odour	Not specified
Melting/boiling point	Melting: > 50°C
Flammability (optional)	Non-flammable
Explosive properties	Not explosive
Self-ignition temperature	390°C
Vapour pressure	2.98 mbar (298 Pa) at 20°C
Mol weight	358 - 414
Water solubility	36.6 g/L at pH 8.43
Flash point	Not relevant (the substance is a solid)
Water partition coefficient ($LogK_{ow}$)	1.51

4. Human Health Safety Assessment

Human Health Safety Assessment

- **Consumer**

Exposure can result from household washing activities with heavy-duty liquid or powder laundry detergents and all-purpose cleaners containing MEA-LAS.

- **Worker**

Exposure can occur either in an MEA-LAS manufacturing facility or in the various industrial or consumer product manufacturing facilities that use MEA-LAS. Those working with MEA-LAS in manufacturing operations could be exposed during maintenance, sampling, testing or other procedures. Each P&G manufacturing facility has a thorough training program for employees and appropriate work processes and safety equipment in place to limit unnecessary exposure. P&G workers have been trained to follow the recommended safety measures in the Extended Safety Data Sheet (eSDS).

Effect Assessment	Result
Acute Toxicity (Oral/inhalation/dermal)	MEA-LAS is not expected to be toxic through oral or dermal acute exposure. Inhalation exposure is not expected to occur. Swallowing large amounts may cause injury.
Irritation/corrosion (Skin/eye/respiratory tract)	MEA-LAS is considered severely irritating to the eye and irritating to skin.
Sensitization	Based on available data, MEA-LAS is not considered to be a human sensitizer.
Toxicity after repeated exposure (Oral/inhalation/dermal)	Prolonged skin contact is unlikely to result in absorption of harmful amounts. In laboratory animals, repeated oral exposure to unrealistically high MEA or LAS levels causes effects on serum parameters, organ weights, bodyweight and/or enzyme activity. No data are available for the inhalation route.
Genotoxicity/mutagenicity	Not mutagenic based on data for MEA and LAS.
Carcinogenicity	Not considered carcinogenic based on available genotoxicity and repeated oral exposure data.
Toxicity for reproduction	Based on available data for MEA and LAS, no developmental or reproductive toxicity is anticipated.

5. Environmental Safety Assessment

Environment Safety Assessment

MEA-LAS is toxic to aquatic organisms. The manufacture of MEA-LAS occurs in self-contained, enclosed systems. Any wastes or spillages are collected and incinerated. Exposure of the environment at this stage is therefore minimal. The substance will be released to waste water treatment plants via its use in heavy-duty liquid or powder laundry detergents, all-purpose cleaners and industrial cleaners. However, when released to sewer systems and the environment, the substance has no continuing identity as the binding between LAS and MEA is weak. Therefore both components have to be assessed individually for fate and toxicity. The most toxic compound is LAS. Both MEA and LAS are readily biodegradable and will be extensively removed by sewage treatment plants. Part of the MEA-LAS entering waste water treatment plants adsorbs to the sewage sludge and will be incinerated or disposed of on agricultural soil with the sludge. Residual levels released to the environment (water and soil) are likely to be below the chronic toxicity levels, and biodegradation of residues continues to take place in the environment.

Effect Assessment	Result
Aquatic Toxicity	Toxic to aquatic organisms
Fate and Behaviour	**Result**
Biodegradation	Readily biodegradable
Bioaccumulation potential	Not likely to accumulate in the food chain (bioconcentration potential is low).
PBT/vPvB conclusion	MEA-LAS does not exhibit PBT or vPvB properties

6. Exposure

Consumer

The most likely route of human exposure (workers and consumers) to MEA-LAS is through dermal contact. The greatest potential of MEA-LAS consumer exposure may be from pretreatment of laundry, due to direct hand and forearm contact with concentrated product formulations. To some extent, consumer exposure can also occur as a result of use of washing and cleaning products as intended.

Worker exposure can occur in MEA-LAS manufacturing facilities or the industrial facilities where the substances are used. Since these types of activities are mainly undertaken in closed systems, exposure is fairly low. Higher worker exposures are likely in industrial or professional applications of end products containing the substances (heavy-duty liquid or powder laundry detergents and all-purpose cleaners).

The exposure of consumers to MEA-LAS in end products is at safe levels. Laundry pre-treatment tasks may occasionally result in mild irritation, which is easily avoided by prompt rinsing of the hands in water. However, workers who might come in contact with the non-formulated, undiluted substances should follow the safety measures recommended in the eSDS, as the non-formulated, undiluted substance can cause severe skin irritation and eye damage.

Environment

In industrial, professional and consumer uses, releases to the waste water treatment plants occur, through the use of laundry and cleaning products. While MEA-LAS is toxic to aquatic organisms, normal production and use results in release to waters that are processed through wastewater treatment facilities, where much of the substance is removed. When released to sewer systems and the environment, the substance has no continuing identity as the binding between LAS and MEA is weak. Therefore both components have to be assessed individually for fate and toxicity. The most toxic compound is LAS. Both MEA and LAS are readily biodegradable and will be extensively removed by sewage treatment plants. In addition, its relatively rapid biodegradation in the environment is likely to keep aquatic concentrations below levels where toxicity would occur. Exposure of soils with LAS occurs via the use of sewage sludge on land, but LAS also degrades rapidly in soils.

7. Risk Management Recommendations (for manufacturing plant workers)

I. Protection

Eye/Face Protection: Safety glasses or chemical goggles.
Skin Protection: Wear apron or protective equipment to prevent any possibility of skin contact.

Hand Protection: Nitrile gloves.

Respiratory Protection: No personal respiratory protective equipment is normally required. In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a combined filter (e.g. A-P2 or ABEK-P2), in compliance with EN 141.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

II. Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

8. EU REACH Status

MEA-LAS has been registered under the European REACH Regulation EC/1907/2006.

9. Classification and Labeling

Under GHS, substances are classified according to their physical, health and environmental hazards. The hazards are communicated via specific labels and the eSDS. 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.

Classification and labelling of **MEA LAS** according to EU CLP/GHS:

Acute Oral Tox. 4 (Hazard statement: H302: Harmful if swallowed).

Skin Irrit. 2 (Hazard statement: H315: Causes skin irritation).

Eye Damage 1 (Hazard statement: H318: Causes serious eye damage).

Signal word: No signal word.

Hazard pictogram:

GHS05: Corrosion

GHS07: Exclamation mark

10. Contact Information

For further information on this substance or product safety summaries in general, please contact us via email at reachfhc.im@pg.com or visit our website at

http://www.pgproductsafety.com/productsafety/icca-gps.shtml

Additional information on the ICCA global product strategy can be found here: http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/

11. Date of Issue

Date of issue: 05/07/2012

Revision #: -

12. Disclaimer

The information contained in this Safety Summary is provided in utmost good faith and has been based on the best information currently available (i.e. the EU REACH Registration dossier). All endpoint data presented in this paper refer to the active ingredient (i.e. concentrated/undiluted substance), unless otherwise noted. This document is NOT intended to be comprehensive or to replace information found in the corresponding Material Safety Data Sheet (SDS). When handling the material in plants, SDS should be used and not this summary. This document may be subject to additional legal terms and conditions set out in the internet disclaimer, http://www.pg.com/en_US/terms_conditions/index.shtml .