

Material Safety Data Sheet

R90 Rhamnolipid Biosurfactant

REGARDING USE OF AGAE TECHNOLOGIES' PRODUCTS: Rhamnolipid products sold by AGAE Technologies LLC are for R&D use only and not for drug, household, diagnosis or other use. It is the user's sole responsibility to evaluate and manage any health, safety and environmental hazards, and/or compliance issues relating to use. All AGAE Technologies' products are intended to be used only by qualified persons who are trained in good laboratory practices and are familiar with the potential risks and hazards inherent with the use of such products. Use care when using this product. Avoid contact with eyes or skin.

Precautionary statement: May form dust in air. Avoid breathing dust. Wear protective gloves / protective clothing / eye protection / face protection.

1. Identification of the substance/preparation and of the company/undertaking

Product name: R90 Rhamnolipid Biosurfactant

Chemical name: Decanoic acid, 3-((6-deoxy-2-O-(6-deoxy-alpha-L-mannopyranosyl)-alpha-L-mannopyranosyl)oxy)-, 1-(carboxymethyl)octyl ester, mixt. with 1-(carboxymethyl)octyl 3-((6-deoxy-alpha-L-mannopyranosyl)oxy)decanoate

CAS number: 869062-42-0

Use of the substance/preparation: Various research and industrial

Company/Undertaking identification:

Name: AGAE Technologies, LLC

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2. Hazards identification

Classification: Not hazardous according to Directive 67/548/EEC

Principal dangers: None known under normal usage

3. Composition/information on ingredients

Components: Glycolipid anionic biosurfactant produced by fermentation/separation/purification process using *Pseudomonas Aeruginosa* in Canola Oil and/or Vegetable Oil substrate

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4. First aid measures

After inhalation: Remove the victim from the contaminated zone and place in fresh air.

After skin contact: Wash with water for at least 20 minutes. Remove contaminated clothing.

After eye contact: Wash with water for at least 20 minutes and consult an ophthalmologist.

After ingestion: Do not make vomit and do not give anything to drink. Seek medical attention.

Instructions for the doctor: Symptomatic treatment.

5. Fire-fighting measures

Extinguishing media: suitable - Carbon dioxide, chemical powder, foam, water spray

Hazardous combustion products: Development of hazardous combustion gases possible in the event of fire

Special protective equipment for fire-fighting: Self-contained breathing apparatus and integral protective clothing

6. Accidental release measures

Person-related precautionary measures: Keep material apart from sources of ignition. Provide sufficient ventilation. Use protective glasses and gloves. Do not inhale/ingest.

Environmental protection measures: Avoid contamination of sewers, surface water, underground water and soil.

Procedure for clean-up: Use absorbent material. Collect product in suitable packaging, seal and label. Eliminate any residue with water.

7. Handling and storage measures

HANDLING: Maintain general and local ventilation. Do not eat, drink or smoke in general area of material.

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STORAGE: In original packaging. Store in a dark location at 4°C. **Highly hygroscopic. Keep container closed tightly at all times and keep in a dry and well-ventilated place.**

Incompatible materials: None

Particular use(s): None

8. Exposure controls/personal protection

Exposure Limit Values/Biological Indicators: No data available

Exposure control:

Respiratory protection: If dusting or misting occurs, wear a NIOSH approved self-contained breathing apparatus

Hand protection: Suitable disposable rubber or PVC gloves

Eye protection: Ocular protection equipment (side-shielded safety glasses)

Skin protection: Suitable protective clothing and safety shoes.

Decontamination or hygiene: Wash hands after handling.

9. Physical and chemical properties

APPEARANCE

-Physical form: Solid/Granular

-Color: Light yellow/brown - Coffee Brown

-Odor: Soapy

Recommended pH for making an aqueous solution: 6.5-10

Density/specific gravity: ND

Melting point: ND

Boiling point: ND

Flash point: >100°C

Solubility in water: Soluble

10. Stability and reactivity

Stability: Stable under normal conditions

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Conditions to avoid: None in particular

Materials to avoid: Strong oxidizing agents, reducing agents.

Hazardous decomposition products: Carbon monoxide, carbon dioxide (in case of high temperatures)

11. Toxicological information

Acute toxicity: LD₅₀ oral (rat) >5000 mg/kg

Skin irritation: Not an irritant

Eye irritation: Primary eye irritation (rabbit) 1% concentration is minimally irritating; 9.5% concentration is corrosive

Sensibilization: Non-sensitizing

12. Ecological information

Eco-toxicity: No data available

Biodegradability: Readily biodegradable

Additional effects: None known

13. Disposal considerations

Product/residues disposal: Incineration, disposal in accordance with local, national and regional regulations.

Contaminated packaging disposal: Incineration, disposal in accordance with local, national and regional regulations.

14. Transport information

Classification for road transport (ADR): Not subject to transport regulations.

Classification for rail transport (RID): Not subject to transport regulations.

Classification for marine transport (IMDG): Not subject to transport regulations.

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Classification for air transport (IATA/DGR): Not subject to transport regulations.

15. Regulatory information

Classification and labeling: No classification is required; not subject to labeling.

Particular provision: None

16. Revisions

February 11, 2019

March 27, 2019