

MATERIAL SAFETY DATA SHEET

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Product Trade Name : Apollo GreenZyme®

Substance Identification: Biological Enzymes (GreenZyme® DNA proteins, CAS : N/A) : 8%;
Sodium Stearate (CAS #822-16-2) : 1%;
Magnesium Sulfate (CAS #7487-88-9) : 0.01%;
Water: (CAS # 7732-18-5) : 90.99%

Physical Data : Description: Semi-clear yellow with a slight fermentation odor.
Evaporation rate: < 1 (butyl / acetate = 1)
pH : 3.5 - 5 (in concentrated form); Final injection at dilution form, pH : 6 to 7.
Boiling point: 212⁰ F. or 100⁰ C. : Specific gravity : 1
Solubility in water: Complete, 100% dispersible.
Vapor pressure: 17.5 mmHg - 20⁰ C.

Health Effects and First Aid : Inhalation: Non-hazardous.
Skin contact: Thoroughly rinse solution off the skin with soap and water.
If an itching sensation or redness occurs, contact a physician.
Eye contact: May cause minor irritation, flush eyes with water. If a burning or itching sensation develops, contact a physician.
Ingestion: Relatively harmless. If swallowed, drink one or two glasses of water. If intestinal symptoms occur, contact a physician.

Reactivity Data : Reactivity: Stable under normal conditions.
Incompatibilities: Any materials that react violently with water.
Hazardous polymerization: Will not occur.

Fire and Explosion Data : Primarily water based solution, non-fire hazardous, non-explosive.

Safeguard Measures: Ventilation: Provide adequate ventilation.
Eye protection: Avoid contact with eyes. Contact lenses are not recommended.
Protective clothing: Avoid skin contact with solution for long periods of time.
Respiratory protection: Not applicable.

Spill of Leak Information : Wash and flush down the area of the spill with liberal amount water.

Transportation Data: DOT Proper shipping name: None. DOT Hazard class: N/A.
DOT I.D. Number: N/A. DOT Label / Placard: None (0 /0 /0 /0)

General Use Area : For Enhanced Oil Recovery (i.e. EOR) and environmental clean-up uses.

Storage and Disposal: Enzyme solution may be stored in most any area, but should be kept away from direct heat or in an area where temperatures can reach over 160⁰ F for prolong period of time. Shelf life: over 3 years, use within 3 years.

In process applications, GreenZyme® can be heated up to 100° C, higher if necessary under pressure, e.g. greater than 400° C in steam-huff-puff process.
Disposal: If necessary, dispose of any unused dilute and/or concentrated solution in non-hazardous waste facility.

Import & Export identification: Harmony system code: 3507.90.0000;

Made in USA.

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