

Hydrogen Release Compound (HRC®)
MATERIAL SAFETY DATA SHEET (MSDS)

Last Revised: **October 9, 2007**

Section 1 - Material Identification

Supplier:



REGENESIS

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Chemical Name: **Propanoic acid, 2-[2-[2-(2-hydroxy-1-oxopropoxy)-1-oxopropoxy]-1-oxopropoxy]-1,2,3-propanetriyl ester**

Chemical Family: **Organic Chemical**

Trade Name: **Hydrogen Release Compound® (HRC®)
Glycerol tripoly lactate and Glycerol**

Product Use: **Used to remediate contaminated soil and groundwater
(environmental applications)**

Section 2 – Chemical Identification

<u>CAS#</u>	<u>Chemical</u>
201167-72-8	Glycerol Tripoly lactate
56-81-5	Glycerol
50-21-5	Lactic Acid

Section 3 - Physical Data

Melting Point: **Not Available (NA)**

Boiling Point: **Not Determined (ND)**

Flash Point: **ND**

Density: **1.3 g/cc**

Section 3 – Physical Data (cont)

Solubility: Acetone and DMSO
Appearance: Viscous amber gel/liquid
Odor: Not detectable
Vapor Pressure: None

Section 4 - Fire and Explosion Hazard Data

Extinguishing Media: Use Water Spray, Carbon Dioxide, Dry Chemical Powder or Appropriate Foam.

Water may be used to keep exposed containers cool.

For large quantities involved in a fire, one should wear full protective clothing and a NIOSH approved self contained breathing apparatus with full face piece operated in the pressure demand or positive pressure mode as for a situation where lack of oxygen and excess heat are present.

Section 5 - Toxicological Information

Acute Effects: May be harmful by inhalation, ingestion, or skin absorption. May cause irritation. To the best of our knowledge, the chemical, physical, and toxicological properties of the glycerol tripoly lactate have not been investigated. Listed below are the toxicological information for glycerol and lactic acid.

RTECS#: MA8050000
Glycerol

Irritation data: SKN-RBT 500 MG/24H MLD BIOFX* 9-4/1970
 85JCAE-,207,1986 85JCAE-,207,1986
 EYE-RBT 126 MG MLD 85JCAE -,656,86
 EYE-RBT 500 MG/24H MLD AJOPAA 29,1363,46
 SKN-RBT 5MG/24H SEV
 EYE-RBT 750 UG SEV

Section 5 – Toxicological Information (cont)

Toxicity data:	ORL-MUS LD50:4090 MG/KG	NIIRDN 6,215,1982
	FRZKAP (6),56,1977	FEPRA7 4,142,1945
	SCU-RBT LD50:100 MG/KG	RCOCB8 56,125,1987
	ORL-RAT LD50:12600 MG/KG	ARZNAD 26,1581,1976
	IHL-	ARZNAD 26,1579,1978
	RATLC50:>570MG/M3/1HBIO	NIIRDN 6,215,1982
	FX*9-4/1970 IPR-RAT LD50:	JAPMA8 39,583,1950
	4420 MG/KG	DMDJAP 31,276,1959
	IVN-RAT LD50: 5566 MG/KG	BIOFX* 9-4/1970
	IPR-MUS LD50: 8700 MG/KG	NIIRDN 6,215,1982
	SCU-MUS LD50: 91 MG/KG	FMCHA2-,C252,91
	IVN-MUS LD50: 4250 MG/KG	FMCHA2-,C252,91
	ORL-RBT LD50: 27 GM/KG	FAONAU 40,144,67
	SKN-RBT LD50:>10GM/KG	JIHTAB 23,259,41
	IVN-RBT LD50: 53 GM/KG	FMCHA2-,C252,91
	ORL-GPG LD50: 7750 MG/KG	JIHTAB 23,259,1941
	ORL-RAT LD50:3543 MG/KG	
	SKN-RBT LD50:>2 GM/KG	
	ORL-MUS LD50: 4875 MG/KG	
	ORL-GPG LD50: 1810 MG/KG	
ORL-QAL LD50: >2250		
MG/KG		
Target Organ data:	Behavioral (headache), gastrointestinal (nausea or vomiting), Paternal effects (spermatogenesis, testes, epididymis, sperm duct), effects of fertility (male fertility index, post-implantation mortality).	
RTECS#:	OD2800000	
	Lactic acid	

Only selected registry of toxic effects of chemical substances (RTECS) data is presented here. See actual entry in RTECS for complete information on lactic acid and glycerol.

Section 6 - Health Hazard Data

Handling: Avoid continued contact with skin. Avoid contact with eyes.

In any case of any exposure which elicits a response, a physician should be consulted immediately.

First Aid Procedures

Inhalation: Remove to fresh air. If not breathing give artificial respiration. In case of labored breathing give oxygen. Call a physician.

Ingestion: No effects expected. Do not give anything to an unconscious person. Call a physician immediately.

Skin Contact: Flush with plenty of water. Contaminated clothing may be washed or dry cleaned normally.

Eye contact: Wash eyes with plenty of water for at least 15 minutes lifting both upper and lower lids. Call a physician.

Section 7 - Reactivity Data

Conditions to Avoid: Strong oxidizing agents, bases and acids

Hazardous Polymerization: None known

Further Information: Hydrolyses in water to form Lactic Acid and Glycerol.

Section 8 - Spill, Leak or Accident Procedures

After Spillage or Leakage: Neutralization is not required. This material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

Disposal: Laws and regulations for disposal vary widely by locality. Observe all applicable regulations and laws. This material, may be disposed of in solid waste. Material is readily degradable and hydrolyses in several hours.

No requirement for a reportable quantity (CERCLA) of a spill is known.

Section 9 - Special Protection or Handling

Should be stored in plastic lined, steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass containers.

Protective Gloves: Vinyl or Rubber

Eyes: Splash Goggles or Full Face Shield
Area should have approved means of washing eyes.

Ventilation: General exhaust.

Storage: Store in cool, dry, ventilated area. Protect from incompatible materials.

Section 10 - Other Information

This material will degrade in the environment by hydrolysis to lactic acid and glycerol. Materials containing reactive chemicals should be used only by personnel with appropriate chemical training.

The information contained in this document is the best available to the supplier as of the time of writing. Some possible hazards have been determined by analogy to similar classes of material. No separate tests have been performed on the toxicity of this material. The items in this document are subject to change and clarification as more information becomes available.