

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Trade name or designation of the mixture** Hydrogen Release Compound (HRC®)

**Registration number** -

**Synonyms** None.

**Issue date** 24-October-2021

**Version number** 01

**Revision date** -

**Supersedes date** -

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Remediation of soils and groundwater.

**Uses advised against** None known.

### 1.3. Details of the supplier of the safety data sheet

**Company name** REGENESIS  
**Address** Cambridge House  
 Henry Street  
 Bath, Somerset  
 BA1 1BT  
 United Kingdom

**General information** +44 (0) 1225 618161

**E-mail** CustomerService@regenesisc.com

### 1.4. Emergency telephone number

**General in EU** 112 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**CHEMTREC** For Dangerous Goods Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:

**International** (+)1-703-527-3887

**USA, Canada** (+)1-800-424-9300

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

##### Health hazards

Skin corrosion/irritation Category 2 H315 - Causes skin irritation.

Serious eye damage/eye irritation Category 1 H318 - Causes serious eye damage.

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

**Contains:** Glycerol Tripoly lactate, Lactic acid

##### Hazard pictograms



**Signal word** Danger

##### Hazard statements

H315 Causes skin irritation.

H318 Causes serious eye damage.

## Precautionary statements

### Prevention

P260	Do not breathe vapour.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.

### Response

P302 + P352	IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE/doctor.
P332 + P313	If skin irritation occurs: Get medical advice/attention.

### Storage

Not assigned.

### Disposal

Not assigned.

### Supplemental information on the label

None.

### 2.3. Other hazards

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Glycerol Tripolylactate	62-67	201167-72-8	-	-	
<b>Classification:</b> Skin Irrit. 2;H315, Eye Dam. 1;H318					
Glycerol	33-38	56-81-5 200-289-5	-	-	#
<b>Classification:</b> -					
Lactic acid	<10	50-21-5 200-018-0	-	-	
<b>Classification:</b> Acute Tox. 4;H302, Acute Tox. 3;H331, Skin Irrit. 2;H315, Eye Dam. 1;H318					

#### List of abbreviations and symbols that may be used above

#: This substance has been assigned Community workplace exposure limit(s).

#### Composition comments

All concentrations are in percent by weight unless otherwise indicated.

## SECTION 4: First aid measures

#### General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 4.1. Description of first aid measures

##### Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

##### Skin contact

Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

##### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

##### Ingestion

Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Get medical attention if symptoms occur.

#### 4.2. Most important symptoms and effects, both acute and delayed

Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

#### General fire hazards

No unusual fire or explosion hazards noted.

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical powder. Foam.

<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>5.2. Special hazards arising from the substance or mixture</b>	During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides, phosphorus compounds and metal oxides.
<b>5.3. Advice for firefighters</b>	
<b>Special protective equipment for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Special fire fighting procedures</b>	Move containers from fire area if you can do so without risk. Water spray should be used to cool containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Wear appropriate personal protective equipment.
<b>For emergency responders</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapours or divert vapour cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

**6.4. Reference to other sections** For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

<b>7.1. Precautions for safe handling</b>	Do not breathe vapour. Do not get this material in contact with eyes. Avoid contact with skin and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
<b>7.2. Conditions for safe storage, including any incompatibilities</b>	Store in original tightly closed container. Store in a cool, dry, well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Recommended storage containers: plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass.
<b>7.3. Specific end use(s)</b>	Remediation of soils and groundwater.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

##### UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	TWA	10 mg/m3	Mist.

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

### 8.2. Exposure controls

**Appropriate engineering controls** Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

### Individual protection measures, such as personal protective equipment

**General information** Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

<b>Eye/face protection</b>	Wear approved, tight fitting indirect vented or non-vented safety goggles where splashing is probable. Face shield is recommended. Eye protection should meet standard EN 166.
<b>Skin protection</b>	
<b>- Hand protection</b>	Wear appropriate chemical resistant gloves. Rubber or vinyl-coated gloves are recommended. Wear suitable gloves tested to EN374.
<b>- Other</b>	Wear appropriate chemical resistant clothing.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use filter type A according to EN 14387.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>Hygiene measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
<b>Environmental exposure controls</b>	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	Liquid.
<b>Form</b>	Viscous gel/liquid.
<b>Colour</b>	Amber.
<b>Odour</b>	Odourless.
<b>Odour threshold</b>	Not available.
<b>pH</b>	3 (3% solution/water)
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Relative density</b>	1.1 - 1.3 (Water = 1)
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Solubility (other)</b>	Acetone and DMSO.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	20,000 - 40,000 cP
<b>Explosive properties</b>	Not available.
<b>Oxidising properties</b>	Not available.

### 9.2. Other information

<b>Specific gravity</b>	1.1 - 1.3
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## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Undergoes hydrolysis in water to form lactic acid and glycerol.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong oxidising agents. Bases. Acids.
<b>10.6. Hazardous decomposition products</b>	Thermal decomposition or combustion may produce: carbon oxides, phosphorus compounds, metal oxides.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

<b>Inhalation</b>	May cause irritation to the respiratory system.
<b>Skin contact</b>	Causes skin irritation.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure. Ingestion may cause irritation and malaise.

**Symptoms** Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

### 11.1. Information on toxicological effects

**Acute toxicity** Not expected to be acutely toxic.

Components	Species	Test Results
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Glycerol (CAS 56-81-5)

#### Acute

#### Oral

LD50

Rat

12600 mg/kg

**Skin corrosion/irritation** Causes skin irritation.

**Serious eye damage/eye irritation** Causes serious eye damage.

**Respiratory sensitisation** Due to partial or complete lack of data the classification is not possible.

**Skin sensitisation** Due to partial or complete lack of data the classification is not possible.

**Germ cell mutagenicity** Due to partial or complete lack of data the classification is not possible.

**Carcinogenicity** Due to partial or complete lack of data the classification is not possible.

**Reproductive toxicity** Due to partial or complete lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** Due to partial or complete lack of data the classification is not possible.

**Specific target organ toxicity - repeated exposure** Due to partial or complete lack of data the classification is not possible.

**Aspiration hazard** Due to partial or complete lack of data the classification is not possible.

**Mixture versus substance information** No information available.

## SECTION 12: Ecological information

**12.1. Toxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
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Glycerol (CAS 56-81-5)

#### Aquatic

Crustacea

EC50

Crustacea

> 10000 mg/l, 24 Hours

**12.2. Persistence and degradability** Material is readily degradable and undergoes hydrolysis in several hours.

**12.3. Bioaccumulative potential** No data available.

#### **Partition coefficient**

#### **n-octanol/water (log Kow)**

Glycerol (CAS 56-81-5)

-1.76

Lactic acid (CAS 50-21-5)

-0.72

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** No data available.

**12.5. Results of PBT and vPvB assessment** This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

**12.6. Other adverse effects** None known.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Hydrogen Release Compound (HRC®)

929257 Version #: 01 Revision date: - Issue date: 24-October-2021

SDS Great Britain

5 / 7

<b>Residual waste</b>	Dispose in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Retained direct EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**

Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

#### Other regulations

This product is classified and labelled in accordance with the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain. This Safety Data Sheet is compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758.

Use of this product by young persons under the age of 18 is not allowed in accordance with the Management of Health and Safety at Work Regulations 1999 [SI 1999/3242], as amended. Follow the requirements of the Control of Substances Hazardous to Health Regulations 2002 [SI 2002/2677], as amended, when using this material.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

**SECTION 16: Other information**

**List of abbreviations**

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstracts Service.  
CEN: European Committee for Standardization (Comité Européen de Normalisation).  
DNEL: Derived No Effect Level.  
ECHA: European Chemicals Agency  
IATA: International Air Transport Association.  
IBC: Intermediate Bulk Container.  
IMDG: International Maritime Dangerous Goods.  
MARPOL: International Convention for the Prevention of Pollution from Ships.  
PBT: Persistent, bioaccumulative, toxic.  
PNEC: Predicted No Effect Concentration.  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
vPvB: very Persistent, very Bioaccumulative.

**References**

ECHA: European Chemical Agency.  
C&L Inventory database.  
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.  
IATA: International Air Transport Association.  
IMDG Code: International Maritime Dangerous Goods Code.  
Rules for international transport of dangerous goods by railway (RID)

**Information on evaluation method leading to the classification of mixture**

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

**Full text of any H-statements not written out in full under Sections 2 to 15**

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H331 Toxic if inhaled.

**Training information**

Follow training instructions when handling this material.

**Disclaimer**

Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.