



“Injection Ready” 60% QRS-SL™ Plus Sodium Lactate

Quick Release Substrate with NutriPlus™ a Proprietary Nutrient Package

For Aquifer Remediation and Conditioning

SAFETY DATA SHEET

Effective Date: 1/1/2020

1. Product Identification

Synonyms:	Quick Release Substrate Plus (QRS™-SL Plus); Sodium Lactate; Propanoic acid, 2-Hydroxy Monosodium salt; L-Lactic Acid, Sodium Salt
Recommended Use:	Treatment of groundwater contaminated with chlorinated solvents and other anaerobically degradable compounds.
Supplier:	Terra Systems, Inc. 130 Hickman Road, Suite 1 Claymont, Delaware 19703 Telephone (302) 798-9553 Fax (302) 798-9554 www.terrasystems.net

2. Hazards Identification

Emergency Overview

Caution:	May cause eye irritation.
Health Rating:	1 - Slight
Flammability Rating:	0 - None
Reactivity Rating:	0 - None
Contact Rating:	1 - Slight
Protective Equipment:	Goggles; Proper Gloves
Storage Color Code:	Orange (General Storage)
Potential Health Effects	
Inhalation:	Not expected to be a health hazard
Ingestion:	Not expected to be a health hazard via ingestion
Skin Contact:	No adverse effects expected
Eye Contact:	May cause irritation, possible reddening
Chronic Exposure:	No information found

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Aggravation of Pre-existing Conditions:

No information found

3. Composition/Information on Ingredients

Ingredient	CAS#	Percent	Hazardous
Sodium Lactate	72-17-3	60	Yes
Organic Nutrients, Inorganic Nutrients and Surfactants	Mixture	1-5	No
Water	7732-18-5	35-39	No

Molecular Weight: No available
Chemical Formula: Not available

The organic, inorganic nutrients and surfactant mixture is a trade secret and consists of ingredients of unknown acute toxicity.

4. First Aid Measures

Inhalation: Not expected to require first aid measures. Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion: If large amounts were swallowed, give water to drink and get medical advice.

Skin Contact: Not expected to require first aid measures. Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

5. Fire Fighting Measures

Fire: Flash point: 110 C (230 F). Not considered to be a fire hazard.

Explosion: Not considered to be an explosion hazard.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.



6. Accidental Release Measures

Clean-up personnel may require protective clothing. Absorb in sand, paper towels, “Oil Dry”, or other inert material. Scoop up and containerize for disposal. Flush trace residues to sewer with soap and water. Containerized waste may be sent to an approved waste disposal facility.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Avoid long storage times. Containers of this material may be hazardous when empty since they do retain product residues (vapors, liquid). Observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:	None established.
Ventilation System:	Not expected to require any special ventilation.
Personal Respirators (NIOSH Approved):	Not expected to require personal respirator usage.
Skin Protection:	Wear protective gloves and clean body-covering clothing.
Eye Protection:	Use chemical safety goggles and/or a full face shield where splashing is possible. Provide readily accessible eye wash stations and safety showers.
Slips, Trips, and Falls:	Material is slippery when spilled. Clean up with sand, paper towels, or other inert material.

9. Physical and Chemical Properties

Appearance:	Colorless to yellow liquid.
Odor:	Odorless
Solubility:	100% soluble in water.
Specific Gravity (water=1):	1.32. (11.01 pounds per gallon)
pH:	6.5-8.5
% Volatiles by volume @ 21C (70F):	No information found.
Boiling Point:	110 C (230 F)
Melting Point:	17 C (63 F)
Flash Point (F):	No information found
Autoignition Temperature:	No information found
Decomposition Temperature:	No information found.
Vapor Density (Air=1):	0.7
Vapor Pressure (mm Hg):	14 @ 20 C (68 F)
Evaporation Rate (BuAc=1):	No information found
Viscosity @ 23 C (73 F):	100 centipoises



Partition Coefficient (octanol/water): No information found

10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.
Reactivity: Not reactive under ordinary conditions.
Hazardous Decomposition Products: Carbon dioxide and carbon monoxide may form when heated to decomposition.
Hazardous Polymerization: Will not occur.
Incompatibilities: Strong oxidizers, acids.
Conditions to Avoid: Incompatibles. Isolate from heat and open flame.

11. Toxicological Information

Oral rat LD50: 2000 mg/Kg. Irritation Data for Sodium Lactate: (Std Draize, rabbit, eye): 100 mg - mild.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Sodium Lactate (72-17-3)	No	No	None
Water (7732-18-5)	No	No	None

12. Ecological Information

Environmental Fate: Mobile with water and readily biodegradable
Environmental Toxicity: Ecological injuries are not known or expected under normal use; (No effect on Daphnia @ 10g/L)
Degradability: This product is completely biodegradable under both aerobic and anaerobic conditions.
Soil Mobility: This compound will move with groundwater until the adsorbed onto the soil. Degradation products may be mobile.
Bioaccumulation Potential: No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.



14. Transport Information

Not regulated.

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Sodium Lactate (72-17-3)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	--Canada--			
	Korea	DSL	NDSL	Phil.
Sodium Lactate (72-17-3)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Sodium Lactate (72-17-3)	No	No	No	No
Water (7732-18-5)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	-RCRA-		-TSCA-
	CERCLA	261.33	8(d)
Sodium Lactate (72-17-3)	No	No	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
 Reactivity: No (Mixture / Liquid)



16. Other Information

NFPA Ratings:	Health: 1 Flammability: 0 Reactivity: 0
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