ENVIRONMENTAL RECOVERY

OILFIELD SERVICES & CONSULTING

Salt and Hydrocarbon Remediation Products

Field Office
Searcy, AR

Corporate Office
7555 Katy Freeway - #161
Houston, TX 77024

Field Office
Montgomery, TX

ENVIRONMENTAL RECOVERY

OILFIELD SERVICES & CONSULTING

PRODUCTS:

Enivronmental Recovery, LLC has a system of remediation products and services strictly tailored for today's environmental needs. ***ReNew™, RxDP™, GeoBond™, Crop-Up ™, ACCEL ™,*** **and** ***Displex™,*** and ***GeoPerc™*** are formulated to help resolve soil remediation problems wherever they exist. These products are easy to apply, fast acting, and economical to use.

- ***ReNew™*** is a soluble liquid amendment product that remediates severe salt (sodium chloride) contaminated soils caused from salt water spills and leaks. This specially designed solution quickly displaces harmful sodium with a concentrated source of calcium and vital soil nutrients helping to restore salt contaminated soils and vegetation to their natural growing conditions. ***ReNew™*** improves soil structure for increased water infiltration and permeability. ***ReNew™*** contains no nitrates.

- ***RxDP™*** is used in conjunction with ***ReNew™*** on deep, older sodium damaged soils. ***RxDP™*** was specially designed to displace harmful sodium concentrations found in lower areas of the soil, thus preventing potential recontamination of the surface area often encountered with deeper salt damaged sites. The specially designed additives, incorporated in this product, accelerate its penetration into deeper zones of the soil. Acting as a "protective shield" to sodium, ***RxDP™*** helps prevent rising sodium concentrations from affecting the root zone of crops and vegetation.

- ***GeoBond™1000*** is a soil conditioner and catalyst for use with ***GeoBond™2000*** soil stabilizer and erosion control products. ***GeoBond™2000*** is a polymeric soil conditioner and stabilizer. Used in conjunction with ***GeoBond™1000***, it works to prevent erosion and improve soil tilth. Both ***GeoBond™*** products are non-hazardous products that can be used in conjunction with soil remediation products and to prevent soil erosion.

- ***Crop-Up™*** is a specially designed pre-emergent growth stimulator and nutrient supplement for accelerated germination of crops and vegetation in areas previously affected by salt and hydrocarbon contamination. ***Crop-Up™*** stimulates growth while supplying a stabilized balance of vital nutrients for depleted and stressed soils. Soils affected by salts and hydrocarbons are usually deprived of the soil structure and critical nutrients necessary for seed emergence and re-growth. These soils are generally composed of dense layers that are usually impenetrable to plant roots. ***Crop-Up™*** also strengthens cell wall structure for improved development during plant emergence. ***Crop-Up™*** is a non-hazardous product that can be used in conjunction with soil remediation products such as ***ACCEL™*** and ***ReNew™*** for the remediation of hydrocarbon and salt contaminated soils. Please consult your **Environmental Recovery** representative for product application recommendations and guidelines.

- ***ACCEL™*** helps to remediate soils contaminated by the hydrocarbons from oil muds, oil spills or leaks. This proprietary product contains a concentrated and stabilized nutrient package that promotes and accelerates reproduction and growth of microorganisms present in the soil. ***ACCEL™*** assists these microorganisms in rapidly breaking down hydrocarbon contaminants for a more efficient and economical bioremediation process.

- ***DISPLEX™*** is a highly concentrated aqueous based cleaner and breaker for the removal of petroleum and organic based hydrocarbon accumulation on soils and surfaces. ***DISPLEX™*** is superior for routine cleaning operations in commercial and industrial establishments. ***DISPLEX™*** can be used on concrete, pilings, plant floors, offshore platforms, well heads, tank bottoms, metal parts, rocks and other surfaces. With regular use, ***DISPLEX™*** removes oil and grease build-up and stains on surfaces. After initial applications, less ***DISPLEX™*** is needed for maintenance treatment. ***DISPLEX™*** is a biodegradable product that can be used in conjunction with soil remediation products such as, ***ACCEL™*** and ***ReNew™*** for the bioremediation of hydrocarbon contaminated soils.

- ***GeoPerc™*** is a pre-mix blend of proprietary surfactants and surface tension reducers specially designed for soil remediation. Used alone or with ***ReNew™*** and or ***RxDP™***, ***GeoPerc™*** improves percolation and soil cleansing.

ReNew™

TREATMENT FOR SALT CONTAMINATED SOILS

ReNew™ is a water soluble liquid calcium/nutrient solution that remediates soils contaminated with sodium chloride (NaCl). Salt waters and brine disrupt the uptake and utilization of nutrients that plants and crops require for normal growth. Sodium from produced waters and brine deteriorate soil structure resulting in reduced plant water availability, excess water runoff, and ultimately, erosion. A high sodium concentration in the soil causes plant "yellowing" and dehydration resulting in wilting or stunting of the plant.

Chemically, **ReNew™** affects the ion exchange in the soil. Remediating sodium affected soils necessitates lowering excess exchangeable sodium with a soluble calcium source. The more favorable calcium ions replace the sodium ions present in the soil. The displaced sodium is then free to be flushed out of the root zone by water, allowing plant functions to return to normal.

The remediation effects of **ReNew™** begin immediately, and normal growing conditions are soon regained. Substantial decreases in sodium concentrations can be measured within weeks. Additional soil conditioning may be required depending upon degree and period of contamination.

Treatment of contaminated soils with **ReNew™** is a *quick easy, and economical* way to remediate sodium affected soils.

About **ReNew™**

Reduces sodium levels quickly and effectively.

Helps restore crops and vegetation.

Flocculates soil particles for improved soil structure and water penetration.

Improves nutrient utilization.

Cost-effective treatment.

Easy to apply.

Non-toxic and non-hazardous. Can be applied in and around inhabited areas.

ReNew™....Reclamation of sodium contaminated soils

The principal carrier of salt through our environment is water. In the oil and process industries, salt laden waters are stored and transported via cross country piping and storage networks. These systems, through leaks and spills, cause accidental influxes of salt to the soil that can completely devastate all vegetation and stop biological activity in a matter of days.

SODIUM CONTAMINATION

The primary salt associated with oil field wastes or produced waters is sodium chloride (NaCl). Soils, drill cuttings, and other E&P waste solids exposed to high sodium levels naturally become sodium saturated, or sodic. Previous remedies for excess sodium accumulations and influxes to soil have been limited to those problems of minor agriculture salinization. In many such projects, the addition of large quantities of gypsum (2 ½ to 50 tons per acre) and water leaching (1 acre-foot of water per ton of gypsum) have been incorporated. Results are time consuming and costly. These methods show little to no effect at all when sodium influxes are rapid and during a short period of time such as with heavy laden salt water from pipeline leaks and industrial brine spills.

PROBLEM DEVELOPMENT

Sodium problems can occur suddenly in the case of a spill, or develop gradually in the case of a salt mine or well. As the accumulated sodium reaches higher concentration levels, the plants normal transpiration processes (absorption of water from the soil) are affected. In this process, pure water is removed from the soil and the sodium salts are left behind. As sodium concentrations increase, water that previously flowed easily into the plants root system is reduced.

SOIL RECLAMATION

The parameters often used to estimate sodium damage to the soil include; electrical conductivity (EC), sodium adsorption ratio (SAR), exchangeable sodium percentage (ESP), and cation exchange capacity (CEC).

The following values are recommended for farming and residential conditions:

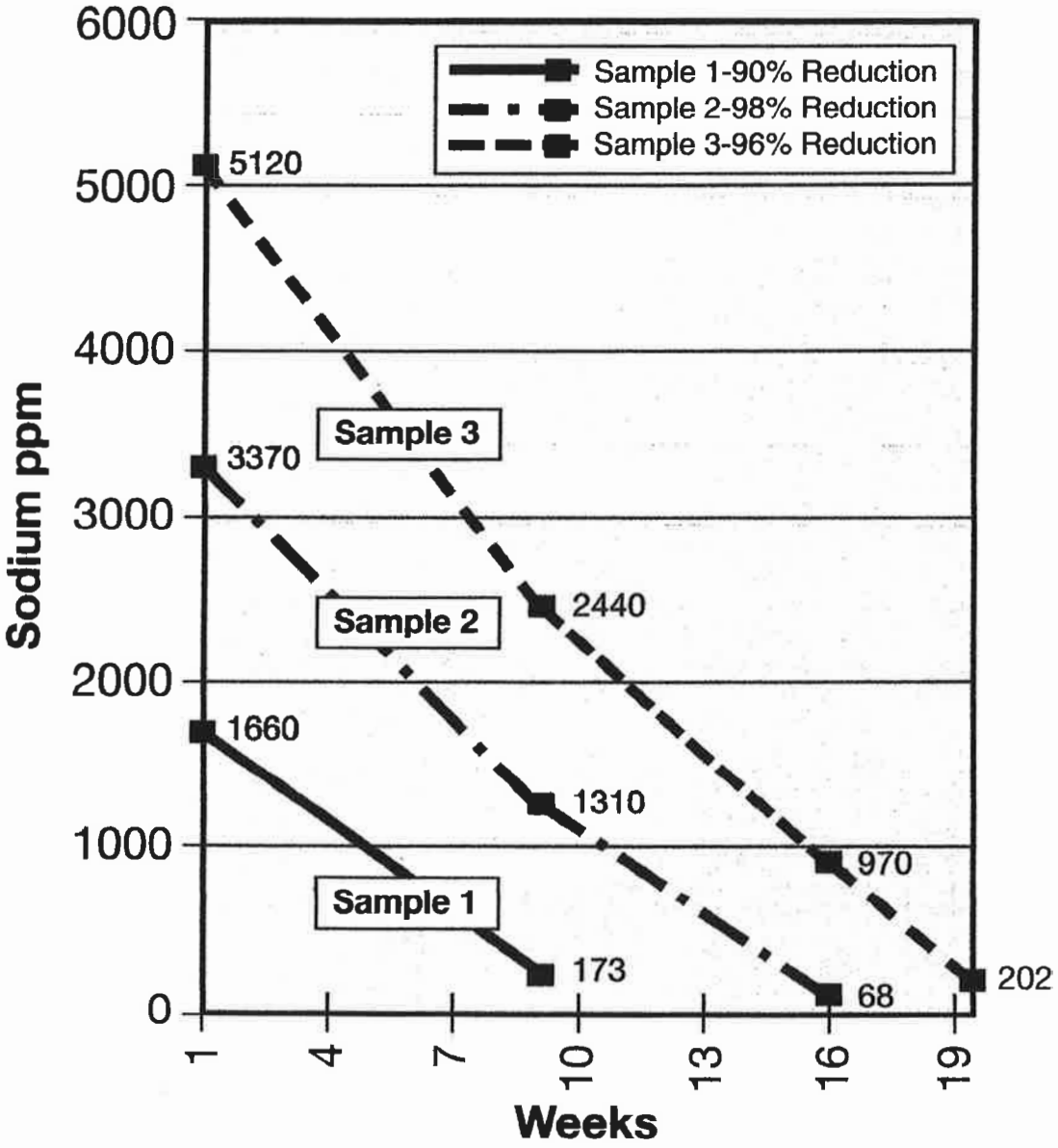
EC	**2-4**
SAR	**<12**
ESP	**<12**
Sodium ppm	**<500**

Remediating severely sodium damaged soils in a timely manner necessitates lowering excess exchangeable sodium with a *soluble* form of calcium. The calcium cations will replace the sodium ions present in the soil. The displaced sodium is then free to be flushed out of the root zone by water. ***ReNew™*** satisfies the need for a *soluble* calcium source, quickly reducing harmful sodium levels while flocculating soil particles for improved soil structure and water penetration. ***ReNew™*** provides a more concentrated and readily available source of calcium than the traditional lime, gypsum, and other calcium amendments. By using a *soluble* calcium source such as ***ReNew™***, sodium is quickly and efficiently leached from the root zone resulting in increased water uptake, improved nutrient utilization, and restoration of crops and vegetation.

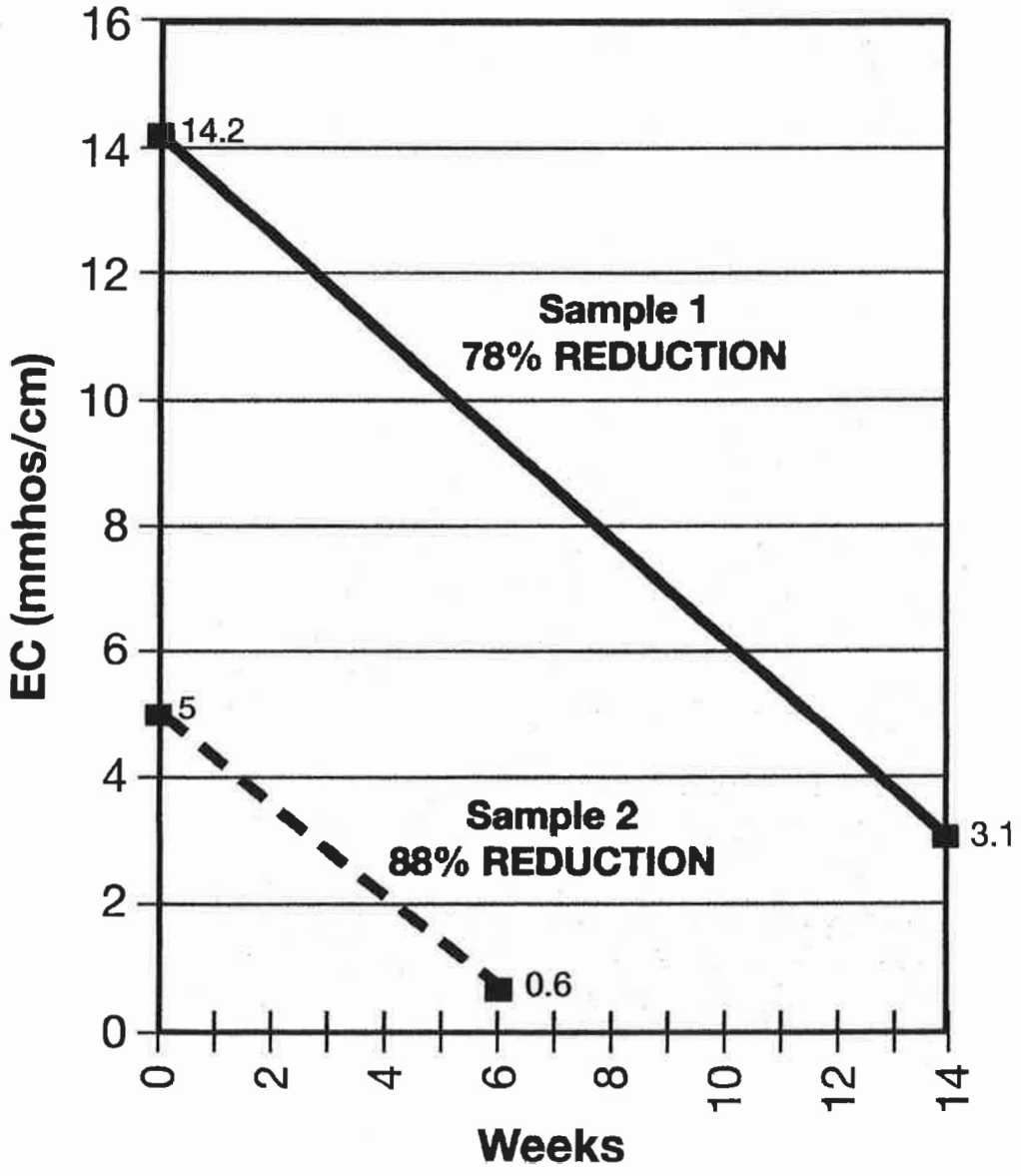
SOIL FERTILIZATION

Soil fertilization is often overlooked when treating sodium contaminated soils. After sodium has been removed from the root zone, damaged plants and vegetation require proper nutrition for recovery and regrowth. ***ReNew™*** supplies valuable nutrients for plant development and growth. ***ReNew™*** offers optimum nitrogen efficiency. ***ReNew™*** also supplies calcium nutrition for improved plant structure and development. Because ***ReNew™*** improves soil structure and increases soil permeability, sufficient amounts of water can once again reach the plant, allowing vegetation to return to its natural state and growing condition.

SALT (NaC1) STUDY
SODIUM REDUCTION
with *ReNew*™



SALT (NaC1) STUDY
ELECTRICAL CONDUCTIVITY
REDUCTION with *ReNew*™



ReNew™, RxDP™, Crop-Up™

TREATMENT FOR SALT CONTAMINATED SOILS

APPLICATION GUIDELINES
-SITE SPECIFIC-

1. Sample soil to establish existing sodium levels.
2. Determine extent of sodium damage in soil to be treated i.e., depth and surface area.
3. Prepare soil to improve percolation by plowing, tilling and bulking.
4. Apply ***RxDP™***, ***ReNew™*** and ***Crop-Up™*** solution into soil.
5. Irrigate the site heavily with fresh water.
6. Apply ***GeoBond™*** to site to improve tilth and control erosion.
7. Sites adversely affected for longer periods of time may require additional treatments.

To verify the volume of soil to be treated is important!

Introduce ***RxDP™*** *and* ***ReNew™*** *to the soil by spraying, tilling, or injection.*

Level soils, efficient irrigation and good drainage are recommended.

Application rates may vary due to varying conditions. Depending upon the severity of the sodium soil damage, the depth of contamination and the soil type, a wide range of effective product usage rates can be applied. Consult your local **E**nvironmental **R**ecovery Sales representative for recommendations.

ReNew™ … Reclamation of sodium contaminated soils

PRODUCED WATER PIPELINE LEAK

BEFORE *ReNew™* APPLICATION

AFTER *ReNew™* APPLICATION

ENVIRONMENTAL RECOVERY
OILFIELD SERVICES & CONSULTING

Report No: ___

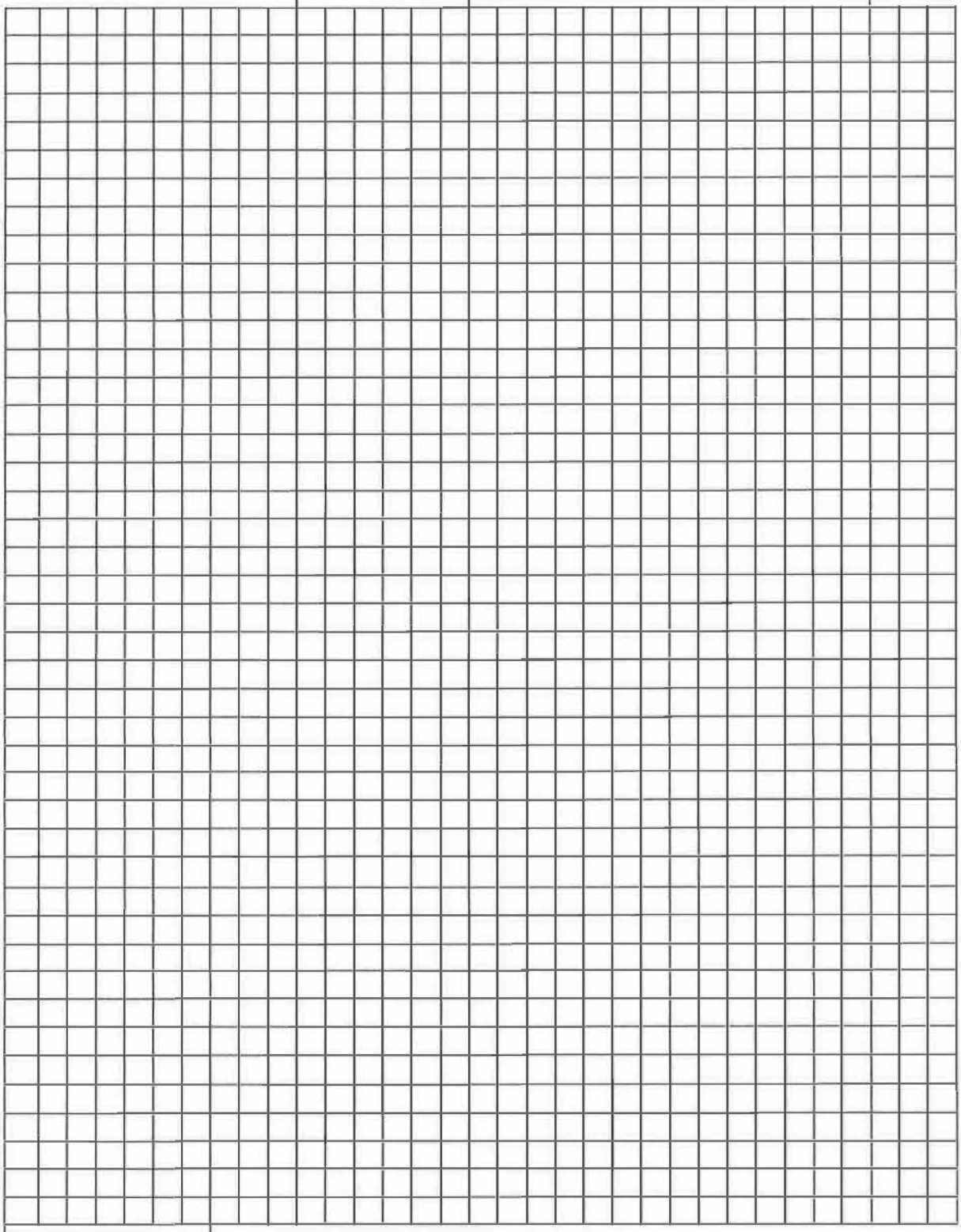
Date: _____

Time: _____

Sample Location Grid

Customer	Address	City, State, Zip	Phone No.

Sight Location	County, State	Report For	Phone No.



Report by:	Office:

ReNew™

TREATMENT FOR SALT CONTAMINATED SOILS

PRODUCT DATA SHEET

PHYSICAL PROPERTIES
Light green/odorless liquid
11.42 lbs./liquid gallon

PACKAGING
Bulk

AREAS FOR USE
Soil contaminated with salt (sodium chloride)

SAFETY AND HANDLING
ReNew™ is a non-toxic solution and is not subject to DOT regulations. Protective clothing, rubber gloves, and either a face shield or safety goggles are recommended. For further details, follow the Safety Data Sheet.

COVERAGE
Site specific, consult **Environmental Recovery** Sales Representative

TOOLS FOR APPLICATION
Spray tank, vacuum truck, agriculture sprinkler systems, or any common method of water application

APPLICATION TEST REQUIREMENTS
EC, SAR, Sodium ppm, ESP, CEC

ReNew™ an effective source for immediate sodium ion exchange.
ReNew™ offers immediate sodium displacement and improved soil structure for increased water infiltration and soil permeability.
ReNew™ will improve soils of naturally inadequate drainage as well as the drainage losses caused by excess sodium concentrations.
ReNew™ causes aggregation of dispersed soil particles, generally associated with older sites and heavily sodium contaminated soil.
ReNew™ serves as a valuable source of nutrition for plants and crops through enhanced nitrogen uptake and efficiency.
ReNew™ is a safe to handle liquid that is easily applied to sodium damaged soil. Any common method of water application will be suitable for ***ReNew™*** application. Spray tanks, vacuum trucks, and agriculture sprinkler systems as well as water flood methods have all been proven effective.
ReNew™ is a concentrated liquid requiring fresh water dilution and irrigation following application.
ReNew™ is available in bulk.

Call (501) 827-9982 for assistance

ENVIRONMENTAL RECOVERY
OILFIELD SERVICES & CONSULTING

ReNew™ SAFETY DATA SHEET

Issuing Date 10-0ec-2014 **Revision Date** 10-Dec-2014

Revision Number 0

1. IDENTIFICATION

GHS product identifier

Product Name ReNew™

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use For Soil Amendment

Uses Advised Against No information available

Distributor's Details

Environmental Recovery
7555 Katy Freeway #161
Houston, TX. 77024

Emergency Telephone Number

Emergency Telephone Number CHEMTREC: 1-800-424-9300 for US/703-527-3887 outside US

2. HAZARDS IDENTIFICATION

Classification

This product is considered non-hazardous by the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

Serious Eye Damage/Eye Irritation Category 2

GHS Label elements. including precautionary statements

Emergency Overview

Signal Word **Warning**

Hazard Statements
May be harmful if swallowed
Causes serious eye irritation

Appearance: Colorless to Amber / Light Green

Physical State: Liquid

Precautionary Statements Prevention

- Wash face, hands and any exposed skin thoroughly after handling.
- Wear eye/face protection.

General Advice

- None

Eyes

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.

Storage

- None

Disposal

- None

Hazard Not Otherwise Classified (HNOC)

Not applicable

3. COMPOSITION INFORMATION ON INGREDIENTS

The composition of this product is proprietary. In the event of a medical emergency, compositional information will be revealed to a physician of nurse. **This product is Non-Hazardous as defined in 29 CFR 1910.1200.**

4. FIRST AID MEASURES

Description of necessary first-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Remove from exposure, lie down. If symptoms persist, call a physician.
Ingestion	Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects Irritation

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical
No information available.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions. protective equipment and emergency procedures

Personal Precautions Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spilLleak. Do not touch or walk through spilled material.

Advice for emergency responders Wear personal protective equipment.

Environmental Precautions

Environmental Precautions

Avoid release to the environment. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material

Methods for Cleaning Up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
After cleaning, flush away traces with water. Prevent product from entering drains.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practices. Wear PPE

Conditions for safe storage. including any incompatibilities

Storage Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Appropriate engineering controls

Engineering Measures Provide local exhaust ventilations system When there is a potential for exposure, an emergency eyewash and safety shower should be provided within the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear safety glasses with non-flexible side shields or chemical goggles A face shield should be worn if a potential for splashing or spraying exists.

Skin and Body Protection Wear appropriate protective, impervious clothing. Wear appropriate protective non-leather protective gloves and boots. Chemical protective gloves and boots such as PVC, Neoprene, or Heavy Nitrile are recommended. Leather products do not offer adequate protection and will dehydrate with resultant shrinkage and possible destruction

Respiratory Protection A respirator is not indicated under normal operating conditions. Use of a NIOSH - approved respirator (N95 or greater) should be based on the presence of nuisance dusts.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	**Liquid**	**Appearance**	**Colorless/Amber/Light Green**
Odor	**Odorless**	**Odor Threshold**	**No information available**

Property	Values	Remarks - Method
pH	6.0 - 8.0	None known
Melting Point/Range	Not determined	None known
Boiling Point/Boiling Range	112°C / 234 OF	None known
Flash Point	Not applicable.	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)		None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	< 0.1 mmHg @ 68°F (20°C)	None known
Vapor Density	No data available	None known
Specific Gravity	1.39 @ 15°C (59°F)	None known
Water Solubility	Completely soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	Not determined	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	not determined	None known

Flammable Properties Not flammable

Explosive Properties No data available

Oxidizing Properties No data available

Other information

VOC Content (%) Not applicable.

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation.
Eye Contact	Irritating to eyes.
Skin Contact	Slightly toxic by dermal absorption.
Ingestion	Moderately toxic by ingestion.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.
Reproductive Toxicity	No information available.

STOT - single exposure	No information available.
STOT • repeated exposure	No information available.
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Persistence and Degradability	No information available.
Bioaccumulation	

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.
Contaminated Packaging	Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT - Not Regulated

15. REGULATORY INFORMATION

International Inventories

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSUNDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 3111312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard 1**	**Flammability 0**	**Instability 0**	**Physical and Chemical Hazards -**
HMIS	**Health Hazard 1**	**Flammability 0**	**Physical Hazard 0**	**Personal Protection X**

Issuing Date	10-0ec-2014
Revision Date	10-0ec-2014
Revision Note	Initial Release.

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

RxDP™

TREATMENT FOR SALT CONTAMINATED SOILS

PRODUCT DATA SHEET

RxDP™ is used in conjunction with ***ReNew™*** on deep, older sodium damaged soils. ***RxDP™*** was specially designed to displace harmful sodium concentrations found in lower areas of the soil, thus, preventing potential recontamination of the surface area often encountered with deeper salt damaged sites. The specially designed additives incorporated in this product accelerate its penetration into deeper zones of the soil. Acting as a "protective shield" to sodium, ***RxDP™*** helps prevent rising sodium concentrations from affecting the root zone of crops and vegetation.

PERFORMANCE

RxDP™ quickly displaces sodium ions attached to the soil particles. The ions found in ***RxDP™*** are absorbed more strongly than the sodium ion, thus, the sodium ions are replaced in the soil allowing the soil to return to its original state and condition. ***RxDP™*** improves the soil structure increasing soil permeability and water uptake and allowing sodium to be leached down further from the root zone.

PHYSICAL PROPERTIES

Red-amber/odorless liquid
11.3-11.6 lbs. /liquid gallon

PACKAGING

Bulk only

AREAS FOR USE

Soil deeply contaminated with salt (sodium chloride)

SAFETY AND HANDLING

RxDP™ is a non-toxic solution and is not subject to DOT regulations. Protective clothing, rubber gloves, and either a face shield or safety goggles are recommended. For further details, follow the Safety Data Sheet.

COVERAGE

Site specific, consult **Environmental Recovery** Sales Representative

TOOLS FOR APPLICATION

Spray tank, vacuum truck, agriculture sprinkler systems, or any common method of water application

APPLICATIONTEST REQUIREMENTS

EC, SAR, Sodium ppm, ESP, CEC

Call (501) 827-9982 for assistance

ENVIRONMENTAL RECOVERY
OILFIELD SERVICES & CONSULTING

RxDP™ SAFETY DATA SHEET

Issuing Date 10-0ec-2014 **Revision Date** 10-Dec-2014

Revision Number 0

1. IDENTIFICATION

GHS product identifier

Product Name *RxDP™*

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use For Soil Amendment

Uses Advised Against No information available

Distributor's Details

Distributor Address
Environmental Recovery
7555 **Katy Freeway** - #161
Houston, TX. 77024

Emergency Telephone Number

Emergency Telephone Number CHEMTREC: 1-800-424-9300 for US/703-527-3887 outside US

2. HAZARDS IDENTIFICATION

Classification

This product is considered non-hazardous by the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

Serious Eye Damage/Eye Irritation Category 2

GHS Label elements. including precautionary statements

Emergency Overview

Signal Word **Warning**

Hazard Statements
May be harmful if swallowed
Causes serious eye irritation

Appearance: Colorless to Amber / Light Red

Physical State: Liquid

Precautionary Statements

Prevention

- Wash face, hands and any exposed skin thoroughly after handling.
- Wear eye/face protection.

General Advice

- None

Eyes

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.

Storage

- None

Disposal

- None

Hazard Not Otherwise Classified (HNOC)

Not applicable

3. COMPOSITION INFORMATION ON INGREDIENTS

The composition of this product is proprietary. In the event of a medical emergency, compositional information will be revealed to a physician of nurse. **This product is Non-Hazardous as defined in 29 CFR 1910.1200.**

4. FIRST AID MEASURES

Description of necessary first-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Remove from exposure, lie down. If symptoms persist, call a physician.
Ingestion	Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms/effects. acute and delayed

Most Important Symptoms/Effects Irritation

Indication of immediate medical attention and special treatment needed. if necessary

Notes to Physician Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical
No information available.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions. protective equipment and emergency procedures

Personal Precautions Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spililleak. Do not touch or walk through spilled material.

Advice for emergency responders Wear personal protective equipment.

Environmental Precautions

Environmental Precautions Avoid release to the environment. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material

Methods for Cleaning Up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
After cleaning, flush away traces with water. Prevent product from entering drains.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practices. Wear PPE

Conditions for safe storage. including any incompatibilities

Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.
Incompatible Products	None known based on information supplied.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Appropriate engineering controls

Engineering Measures	Provide local exhaust ventilations system When there is a potential for exposure, an emergency eyewash and safety shower should be provided within the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear safety glasses with non-flexible side shields or chemical goggles A face shield should be worn if a potential for splashing or spraying exists.
Skin and Body Protection	Wear appropriate protective, impervious clothing. Wear appropriate protective non-leather protective gloves and boots. Chemical protective gloves and boots such as PVC, Neoprene, or Heavy Nitrile are recommended. Leather products do not offer adequate protection and will dehydrate with resultant shrinkage and possible destruction
Respiratory Protection	A respirator is not indicated under normal operating conditions. Use of a NIOSH - approved respirator (N95 or greater) should be based on the presence of nuisance dusts.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	**Liquid**	**Appearance**	**Colorless/Amber/Light Green**
Odor	**Odorless**	**Odor Threshold**	**No information available**

Property	**Values**	**Remarks - Method**
pH	6.0 - 8.0	None known
Melting Point/Range	Not determined	None known
Boiling Point/Boiling Range	112°C / 234 OF	None known
Flash Point	Not applicable.	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)		None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	< 0.1 mmHg @ 68°F (20°C)	None known
Vapor Density	No data available	None known
Specific Gravity	1.39 @ 15°C (59^0F)	None known
Water Solubility	Completely soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	Not determined	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	not determined	None known

Flammable Properties	Not flammable
Explosive Properties	No data available

Oxidizing Properties No data available

Other information

VOC Content (%) Not applicable.

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation.
Eye Contact	Irritating to eyes.
Skin Contact	Slightly toxic by dermal absorption.
Ingestion	Moderately toxic by ingestion.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.
Reproductive Toxicity	No information available.

STOT - single exposure	No information available.
STOT • repeated exposure	No information available.
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Persistence and Degradability	No information available.
Bioaccumulation	

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.
Contaminated Packaging	Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT - Not Regulated

15. REGULATORY INFORMATION

International Inventories

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSUNDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 3111312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard 1**	**Flammability 0**	**Instability 0**	**Physical and Chemical Hazards -**
HMIS	**Health Hazard 1**	**Flammability 0**	**Physical Hazard 0**	**Personal Protection X**

Issuing Date	10-0ec-2014
Revision Date	10-0ec-2014
Revision Note	Initial Release.

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

Crop-Up™

TREATMENT FOR SALT CONTAMINATED SOILS

PRODUCT DATA SHEET

PHYSICAL PROPERTIES

Colorless – amber /odorless liquid
10.9 lbs./gal

PACKAGING

55 gallon drums

AREAS FOR USE

Soil deeply contaminated with salt
(sodium chloride)

SAFETY AND HANDLING

Crop-Up™ is a non-toxic solution and is not subject to DOT regulations. Protective clothing. rubber gloves. and either a face shield or safety goggles are recommended. For further details. follow the Safety Data Sheet.

COVERAGE

Site specific, consult **Environmental Recovery** Sales Representative

TOOLS FOR APPLICATION

Spray tank, vacuum truck. agriculture sprinkler systems, or any common method of water application

APPLICATION TEST REQUIREMENTS

NPK, soil nutrients

• ***Crop-Up™*** is specially designed for accelerated restoration of crops and vegetation in areas previously affected by salt and hydrocarbon contamination. ***Crop-Up™*** stimulates growth while supplying a stabilized balance of vital nutrients for depleted and stressed soils. Soils affected by salts and hydrocarbons are usually deprived of the soil structure and critical nutrients necessary for seeding emergence and re-growth. These soils are generally composed of dense layers that are usually impenetrable to plant roots. ***Crop-Up™*** amends the soil by flocculating soil particles and destroying these dense layers. allowing water and nutrients to reach the root zone. ***Crop-Up™*** also strengthens cell wall structure for improved development during plant emergence. ***Crop-Up™*** is a non-hazardous product that can be used in conjunction with soil remediation products such as ***ACCEL™*** and ***ReNew™*** for the remediation of hydrocarbon and salt contaminated soils. Please consult your **GROMEGA** representative for product application recommendations and guidelines,

If used according to recommended procedures and guidelines. ***Crop-Up™*** accelerates the restoration of vegetation in areas previously affected by salt and hydrocarbon contamination.

Call (501) 827-9982 for assistance.

ENVIRONMENTAL RECOVERY
OILFIELD SERVICES & CONSULTING

Crop-Up™ SAFETY DATA SHEET

Issuing Date 10-0ec-2014 **Revision Date** 10-Dec-2014

Revision Number 0

1. IDENTIFICATION

GHS product identifier

Product Name *Crop-Up™*

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use For Soil Amendment

Uses Advised Against No information available

Distributor's Details

Environmental Recovery
7555 Katy Freeway #161
Houston, TX. 77024

Emergency Telephone Number

Emergency Telephone Number CHEMTREC: 1-800-424-9300 for US/703-527-3887 outside US

2. HAZARDS IDENTIFICATION

Classification

This product is considered non-hazardous by the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

Serious Eye Damage/Eye Irritation Category 2

GHS Label elements. including precautionary statements

Emergency Overview

Signal Word **Warning**

Hazard Statements
May be harmful if swallowed
Causes serious eye irritation

Appearance: Colorless to Amber

Physical State: Liquid

Precautionary Statements

Prevention

- Wash face, hands and any exposed skin thoroughly after handling.
- Wear eye/face protection.

General Advice

- None

Eyes

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.

Storage

- None

Disposal

- None

Hazard Not Otherwise Classified (HNOC)

Not applicable

3. COMPOSITION INFORMATION ON INGREDIENTS

The composition of this product is proprietary. In the event of a medical emergency, compositional information will be revealed to a physician of nurse. **This product is Non-Hazardous as defined in 29 CFR 1910.1200.**

4. FIRST AID MEASURES

Description of necessary first-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Remove from exposure, lie
Ingestion	Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects Irritation

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical
No information available.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions. protective equipment and emergency procedures

Personal Precautions Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill / leak. Do not touch or walk through spilled material.

Advice for emergency responders Wear personal protective equipment.

Environmental Precautions

Environmental Precautions Avoid release to the environment. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material

Methods for Cleaning Up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
After cleaning, flush away traces with water. Prevent product from entering drains.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practices. Wear PPE

Conditions for safe storage. including any incompatibilities

Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.
Incompatible Products	None known based on information supplied.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Appropriate engineering controls

Engineering Measures	Provide local exhaust ventilations system When there is a potential for exposure, an emergency eyewash and safety shower should be provided within the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear safety glasses with non-flexible side shields or chemical goggles A face shield should be worn if a potential for splashing or spraying exists.
Skin and Body Protection	Wear appropriate protective, impervious clothing. Wear appropriate protective non-leather protective gloves and boots. Chemical protective gloves and boots such as PVC, Neoprene, or Heavy Nitrile are recommended. Leather products do not offer adequate protection and will dehydrate with resultant shrinkage and possible destruction
Respiratory Protection	A respirator is not indicated under normal operating conditions. Use of a NIOSH - approved respirator (N95 or greater) should be based on the presence of nuisance dusts.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	**Liquid**	**Appearance**	**Colorless/Amber**
Odor	**Odorless**	**Odor Threshold**	**No information available**

Property	**Values**	**Remarks - Method**
pH	6.0 - 8.0	None known
Melting Point/Range	Not determined	None known
Boiling Point/Boiling Range	112°C / 234°F	None known
Flash Point	Not applicable.	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)		None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	< 0.1 mmHg @ 68°F (20°C)	None known
Vapor Density	No data available	None known
Specific Gravity	1.31@ 77°F(25°C)	None known
Water Solubility	Completely soluble	None known
		None known
		None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	Not determined	None known
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	not determined	
Flammable Properties	Not flammable	
Explosive Properties	No data available	

Oxidizing Properties No data available

Other information

VOC Content (%) Not applicable.

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation.
Eye Contact	Irritating to eyes.
Skin Contact	Slightly toxic by dermal absorption.
Ingestion	Moderately toxic by ingestion.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.
Reproductive Toxicity	No information available.

STOT - single exposure	No information available.
STOT • repeated exposure	No information available.
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Persistence and Degradability	No information available.
Bioaccumulation	

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.
Contaminated Packaging	Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT - Not Regulated

15. REGULATORY INFORMATION

International Inventories

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSUNDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 3111312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard 1**	**Flammability 0**	**Instability 0**	**Physical and Chemical Hazards -**
HMIS	**Health Hazard 1**	**Flammability 0**	**Physical Hazard 0**	**Personal Protection X**

Issuing Date	10-0ec-2014
Revision Date	10-0ec-2014
Revision Note	Initial Release.

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Site Remediation Using
ReNew™, RxDP™, Crop-Up™
Old Soil Damage From Multiple Saltwater Leaks

BEFORE

AFTER

ACCEL™

NUTRIENT ADDITIVE FOR TREATMENT OF PETROLEUM HYDROCARBON WASTES

ACCEL™ is a concentrated water soluble nutrient for microorganisms. It promotes the reproduction and growth of naturally occurring microorganisms in the soil which have adapted over time to feed on hydrocarbon pollutants. Use of ***ACCEL™*** accelerates the consumption of hydrocarbons naturally by serving as the energy source for this process. The resulting biodegradation is also a natural process that reduces the hydrocarbons to biomass and subsequently to carbon dioxide. When the hydrocarbon food supply is exhausted, the microorganism population diminishes back to normal levels.

Bioremediation is the most natural and cost effective technology in the environmental field. With ***ACCEL™***, remediation can be accomplished quickly and easily, avoiding more costly options.

Application of ***ACCEL™*** is easy. The product is applied to the affected soils in-situ. It can be sprayed directly onto the affected area, or injected into the soil. Tilling is recommended for faster results. Soil conditions will determine the application concentrations.

Treatment with ***ACCEL™*** liquid nutrient is a quick, easy, and economical way to remediate petroleum hydrocarbon wastes.

About ACCEL™:

Promotes the growth and activity of microorganisms present in the soil.

Provides concentrated nutrition to microorganisms.

Non-toxic and non-hazardous.

Cost-effective way to remediate petroleum hydrocarbon wastes.

Environmentally safe, poses no health threat to humans or animals.

Easy to apply.

ACCEL™....Nutrient additive for accelerated hydrocarbon degradation

"In March of 1989. *the supertanker Exxon Valdez ran aground on Bligh Reef in Prince William Sound, Alaska, flooding one of the nation's most pristine and sensitive environments with approximately* 11 *million gallons of crude oil in about* 5 *hours. In the aftermath of the accident a massive cleanup was organized. Many conventional techniques were used in an effort to remove the oil from the contaminated shorelines and beaches. Methods like booms, skimming, spraying and actual scrubbing of the rocks were unable to clean up all of the oil in the soils."*

"To enhance cleanup efforts the EPA suggested bioremediation be tried. On the basis of favorable results of field tests where remediation occurred two to four times faster than if unaided, a large scale application of nutrients began on August 1, 1989. *Findings from follow up field and laboratory tests conducted then and now, indicate that using nutrients to enhance biodegradation is effective and environmentally safe."*

Bioremediation uses naturally occurring microorganisms, such as bacteria, fungi, or yeast to degrade harmful chemicals into less toxic or non-toxic compounds. Microorganisms, like all living organisms, require nutrients e.g., nitrogen, phosphorous, and trace metals. Microorganisms also break down a wide variety of organic compounds (hydrocarbons) found in nature and are considered nature's recyclers. Some species of soil bacteria process hydrocarbons as a food source converting the contaminant into carbon dioxide, water and fatty acids. Bioremediation recognizes these phenomena and builds upon them.

HYDROCARBON IMPACTS

Oil contaminated soils and waters typically contain high concentrations of hydrocarbons. Hydrocarbons have detrimental effects on soil, water, and the surrounding environment. In plants and crops, high hydrocarbon concentrations cause reduced plant growth, yield and germination. Hydrocarbons, when released to surface soils, penetrate to varying

depths depending upon the soil type. Oil has an affinity for clay. As a result, oil does not penetrate deeply into clay soils. However, oil penetrates deeply into sandy soil. The parameter used to measure hydrocarbon contamination in both soil and water is Total Petroleum Hydrocarbons (TPH). Studies have shown that hydrocarbon loadings of > 1 percent TPH (10,000 ppm) have adverse impacts on plants, crops, and the environment. Regulatory authorities usually require that soils contain < 1 percent TPH.

BIOSTIMULATION

A unique characteristic of bacteria is the fact that as certain microorganisms become exposed to hydrocarbon contaminants, they tend to develop an increased tolerance and ability to degrade those substances. New strains of bacteria naturally appear at hazardous waste sites and begin to degrade the wastes. The art of bioremediation consists of identifying and creating a favorable environment for the growth of the 5 to 10 percent of all microbes in-situ that perform the desired remediation function, thus accelerating the time frame in which these cleanup processes unfold. Since they are acclimatized to the environment, the naturally occurring microorganisms are most effective in the field of bioremediation. ***ACCEL™*** is a water soluble concentrated nutrient for the microorganisms.

ACCEL™ serves as the energy source for microorganisms, improving the organism's rate of reproduction and in turn, increasing the rate of decomposition of hydrocarbons into
carbon dioxide. This product does not conflict with EPA policies or Toxic Substances Control Act (TSCA) regulations concerning the use of microorganisms for the purpose of bioremediation.

OPTIMIZING ENVIRONMENTAL CONDITIONS

Bioremediation ultimately depends on the activities of the microorganisms. Microbial population size may be limited by the existing environmental conditions. By optimizing environmental factors such as; water content, temperature, pH, the presence of toxic materials such as metals and

sodium, the type and amount of organic material present and the availability of nutrients such as nitrogen and phosphorous, regulatory compliance levels can be achieved in minimal amounts of time.

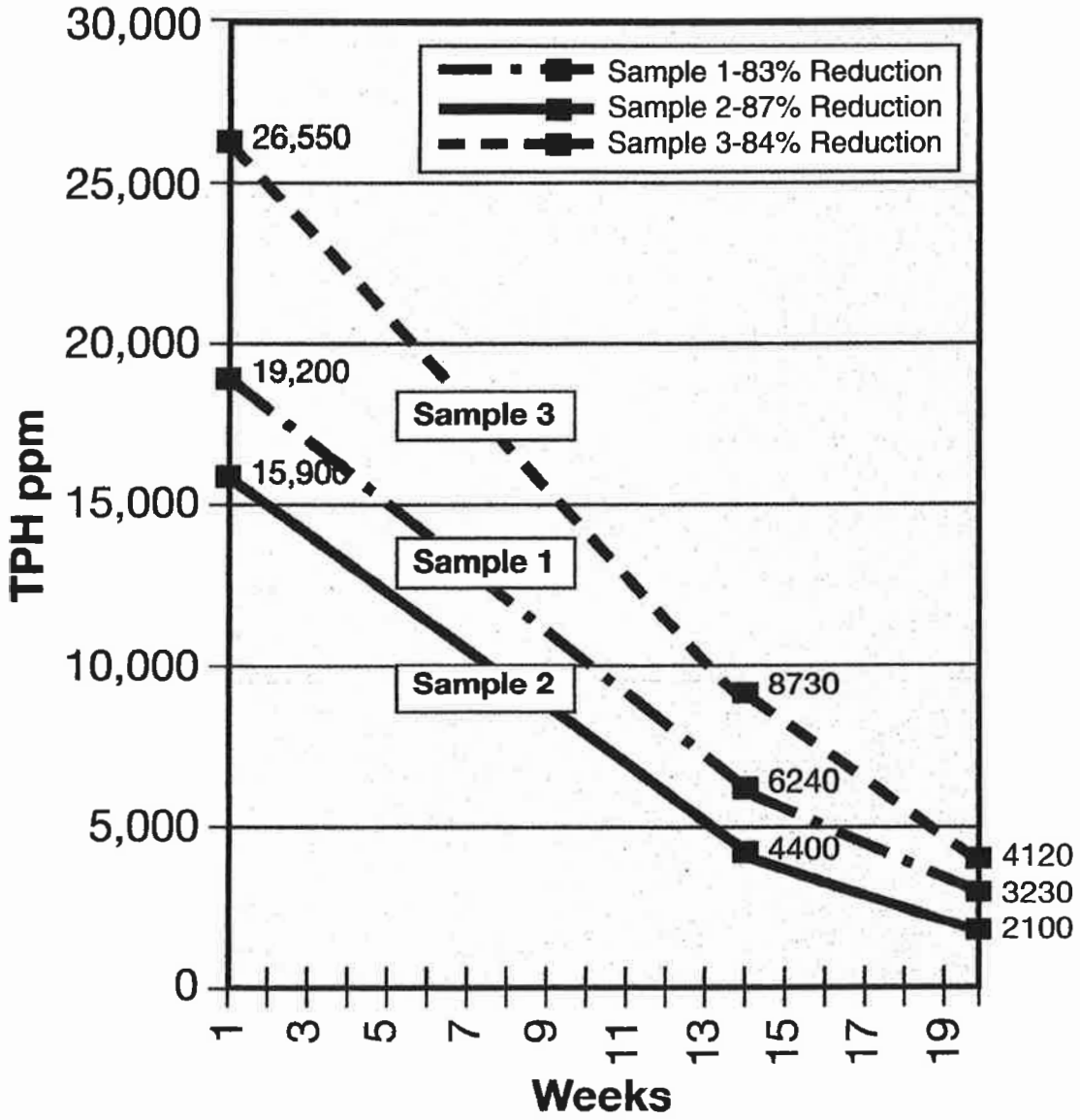
INCREASED NITROGEN UPTAKE

ACCEL™ supplies existing microorganisms with a highly concentrated source of nitrogen. Nitrogen is necessary for the synthesis of proteins and nucleic acids. Exhaustion of available nitrogen inhibits the growth rate of the microbial populations. ***ACCEL™*** offers optimum nitrogen efficiency. When applying ***ACCEL™***, the microorganisms receive a sufficient supply of nitrogen, increasing the growth rate of the population and reducing the amount of time needed to break down petroleum hydrocarbons.

IN SITU TREATMENT

ACCEL™ is a cost-effective, in situ bioremediation product that can be surface applied or injected into the soil. In the case of surface remediation, necessary oxygen is available directly from the atmosphere, whereas in subsurface remediation, oxygen must be supplied by physically delivering water or air to the contaminated material. The top 6 to 18 inches of the contaminated soil is usually treated by tilling the soil to provide aeration, and adding water and nutrients to stimulate bacterial growth. Bioremediation has taken a prominent place among today's technologies used to clean up and protect the environment. ***ACCEL™*** is an easy-to-apply, nondisruptive, cost-effective, and efficient method of enhancing and accelerating bioremediation.

HYDROCARBON STUDY
TPH REDUCTION (HYDROCARBON REDUCTION) with ACCEL™



ACCEL™

NUTRIENT ADDITIVE FOR TREATMENT OF PETROLEUM HYDROCARBON WASTES

APPLICATION GUIDELINES
-SITE SPECIFIC-

1. Sample soil to establish existing contaminant levels.
2. Remove excess free oil and treat sodium damaged soil before applying.
3. Apply **ACCEL™** solution into the soil.
4. Irrigate soil to optimize the bacterial process.
5. Note and adjust soil pH if necessary.
6. Till soil frequently for oxygenation.
7. Highly contaminated sites may require additional treatments.

Petroleum hydrocarbons consist of hundreds of constituents.

High sodium chloride levels and standing oil are toxic to microbes.

Tilling aids penetration, spraying ensures surface coverage.

The remediation process requires:

- *nutrients*
- *water*
- *oxygen*
- *sufficient temperature*
- *Proper pH*

Application rates may vary due to varying conditions. Depending upon the levels of TPH damage, the depth of contamination and soil type, a wide range of effective product usage rates can be applied. Consult your local **Environmental Recovery** Sales Representative for recommendations.

Call (501) 827-9982 for assistance

ACCEL™

NUTRIENT ADDITIVE FOR TREATMENT OF PETROLEUM HYDROCARBON WASTES

PRODUCT DATA SHEET

PHYSICAL FORM
Liquid – Clear to Amber / Light Blue
10.9 lbs./liquid gallon

PACKAGING
55 gallon drums
Bulk

AREAS FOR USE
Soil contaminated with petroleum hydrocarbons

SAFETY
ACCEL™ is a non-toxic, non-hazardous solution and is not subject to DOT regulations. However, it contains a strong solution of alkali earth metal electrolytes. Protective clothing, rubber gloves and either a face shield or safety goggles are recommended. For further details, follow the Safety Data Sheet.

COVERAGE
Site specific, consult **Environmental Recovery** Sales Representative

TOOLS FOR APPLICATION
Spray tank, vacuum truck, agriculture sprinkler systems, or any common method of water application

APPLICATION TEST REQUIREMENTS
As required by governing authority

ACCEL™ accelerates the consumption of petroleum hydrocarbons by serving as a concentrated nutrient source for microorganisms.

ACCEL™ promotes growth and activity of microorganisms already present in the soil. ***ACCEL™*** accelerates the organism's rate of reproduction, thus reducing the amount of time needed to break down the hydrocarbons.

ACCEL™ serves as a valuable source of nutrition for plants and crops. ***ACCEL™*** offers enhanced nitrogen uptake and efficiency.

ACCEL™ is a safe to handle liquid that is easily applied to petroleum contaminated soil. Any common method of water application will be suitable for ***ACCEL™*** application. Spray tanks, vacuum trucks, agriculture sprinkler systems, as well as water flood methods have all been proven effective.

ACCEL™ is a concentrated liquid requiring fresh water irrigation following application. ***ACCEL™*** is available in 55 gallon drums, 275 gallon totes, and bulk.

Call (501) 827-9982 for assistance.

ENVIRONMENTAL RECOVERY
OILFIELD SERVICES & CONSULTING

ACCEL™ SAFETY DATA SHEET

Issuing Date 10-0ec-2014 **Revision Date** 10-Dec-2014

Revision Number 0

1. IDENTIFICATION

GHS product identifier

Product Name ACCEL™

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use For Soil Amendment

Uses Advised Against No information available

Distributor's Details

Environmental Recovery
7555 Katy Freeway #161
Houston, TX. 77024

Emergency Telephone Number

Emergency Telephone Number CHEMTREC: 1-800-424-9300 for US/703-527-3887 outside US

2. HAZARDS IDENTIFICATION

Classification

This product is considered non-hazardous by the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

1.
Serious Eye Damage/Eye Irritation Category 2

GHS Label elements. including precautionary statements

Emergency Overview

Signal Word **Warning**

Hazard Statements
May be harmful if swallowed
Causes serious eye irritation

Appearance: Colorless to Amber / Light Blue

Physical State: Liquid

Precautionary Statements

Prevention

- Wash face, hands and any exposed skin thoroughly after handling.
- Wear eye/face protection.

General Advice

- None

Eyes

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.

Storage

- None

Disposal

- None

Hazard Not Otherwise Classified (HNOC)

Not applicable

3. COMPOSITION INFORMATION ON INGREDIENTS

The composition of this product is proprietary. In the event of a medical emergency, compositional information will be revealed to a physician of nurse. **This product is Non-Hazardous as defined in 29 CFR 1910.1200.**

4. FIRST AID MEASURES

Description of necessary first-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Remove from exposure, lie down. If symptoms persist, call a physician.
Ingestion	Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms/effects. acute and delayed

Most Important Symptoms/Effects Irritation

Indication of immediate medical attention and special treatment needed. if necessary

Notes to Physician Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical
No information available.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions. protective equipment and emergency procedures

Personal Precautions	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill leak. Do not touch or walk through spilled material.
Advice for emergency responders	Wear personal protective equipment.

Environmental Precautions

Environmental Precautions	Avoid release to the environment. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material
Methods for Cleaning Up	Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practices. Wear PPE

Conditions for safe storage. including any incompatibilities

Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.
Incompatible Products	None known based on information supplied.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Appropriate engineering controls

Engineering Measures	Provide local exhaust ventilations system When there is a potential for exposure, an emergency eyewash and safety shower should be provided within the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear safety glasses with non-flexible side shields or chemical goggles A face shield should be worn if a potential for splashing or spraying exists.
Skin and Body Protection	Wear appropriate protective, impervious clothing. Wear appropriate protective non-leather protective gloves and boots. Chemical protective gloves and boots such as PVC, Neoprene, or Heavy Nitrile are recommended. Leather products do not offer adequate protection and will dehydrate with resultant shrinkage and possible destruction
Respiratory Protection	A respirator is not indicated under normal operating conditions. Use of a NIOSH - approved respirator (N95 or greater) should be based on the presence of nuisance dusts.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	**Liquid**	**Appearance**	**Colorless/Amber**
Odor	**Odorless**	**Odor Threshold**	**No information available**

Property	**Values**	**Remarks - Method**
pH	6.0 - 8.0	None known
Melting Point/Range	Not determined	None known
Boiling Point/Boiling Range	112°C / 234°F	None known
Flash Point	Not applicable.	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)		None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	< 0.1 mmHg @ 68°F (20°C)	None known
Vapor Density	No data available	None known
Specific Gravity	1.31@ 77°F(25°C)	None known
Water Solubility	Completely soluble	None known
		None known
		None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	Not determined	None known
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	not determined	
Flammable Properties	Not flammable	
Explosive Properties	No data available	

Oxidizing Properties No data available

Other information

VOC Content (%) Not applicable.

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation.
Eye Contact	Irritating to eyes.
Skin Contact	Slightly toxic by dermal absorption.
Ingestion	Moderately toxic by ingestion.

Symptoms related to the physical. chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.
Reproductive Toxicity	No information available.

STOT - single exposure	No information available.
STOT • repeated exposure	No information available.
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Persistence and Degradability	No information available.
Bioaccumulation	

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.
Contaminated Packaging	Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT - Not Regulated

15. REGULATORY INFORMATION

International Inventories

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSUNDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 3111312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard 1**	**Flammability 0**	**Instability 0**	**Physical and Chemical Hazards -**
HMIS	**Health Hazard 1**	**Flammability 0**	**Physical Hazard 0**	**Personal Protection X**

Issuing Date	10-0ec-2014
Revision Date	10-0ec-2014
Revision Note	Initial Release.

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

DISPLEX™

BIODEGRADABLE ORGANIC SOLVENT, CLEANER, AND BREAKER FOR TREATMENT OF HYDROCARBON WASTE

PRODUCT DATA SHEET

- ***DISPLEX™*** is a highly concentrated aqueous based cleaner and degreaser for the removal of petroleum and organic based hydrocarbon accumulation on soils and surfaces.
- ***DISPLEX™*** is superior for routine cleaning operations in commercial and industrial establishments.
- ***DISPLEX™*** can be used on soil, asphalt, concrete, pilings, plant floors, offshore platforms, well heads, tank bottoms, metal parts, rocks and other surfaces.
- ***DISPLEX™*** is a biodegradable product that can be used in conjunction with soil remediation products such as ***ACCEL™*** and ***ReNew™***, for the bioremediation of hydrocarbon contaminated soils.
- ***DISPLEX™*** when used on a routine basis will help prevent oil and grease accumulation from establishing, resulting in a safer and cleaner environment.
- ***DISPLEX™*** applications and coverage amounts are dependent upon the quantity and type of contamination. For initial application and on heavily contaminated surfaces, such as thick or crusted oil and grease accumulation (tank bottoms, drill cuttings, soils, etc.), ***DISPLEX™*** should be diluted with fresh water at a ratio of 10:01 (10 parts water to 1part ***DISPLEX™***). For moderate accumulations (automotive repair shop floors, etc.) and with routine use, a dilution of 20: 1 is recommended. For light contamination (warehouse floors, etc.), a dilution ratio of 30: 1 is recommended.

PHYSICAL FORM

Light amber
liquid/citrus odor
Specific gravity .99 @ 20°c
pH 6.5 -7.5

PACKAGING

5 gallon pails
55 gallon drums

AREAS FOR USE

Soil, equipment, or surfaces contaminated with petroleum hydrocarbons

SAFETY

DISPLEX™ is a non-toxic, non-hazardous solution, and is not subject to DOT regulations. Protective clothing, rubber gloves, and either a face shield or safety goggles are recommended. For further details, follow the Safety Data Sheet.

TOOLS FOR APPLICATION

Spray tank, high pressure sprayer, steam cleaner, or any common method of liquid application

Call (501) 827-9982 for assistance

ENVIRONMENTAL RECOVERY
OILFIELD SERVICES & CONSULTING

DISPLEX™ SAFETY DATA SHEET

Issuing Date 10-0ec-2014 **Revision Date** 10-Dec-2014

Revision Number 0

1. IDENTIFICATION

GHS product identifier

Product Name ***DISPLEX™***

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use For Soil Amendment

Uses Advised Against No information available

Distributor's Details

Environmental Recovery
7555 Katy Freeway #161
Houston, TX 77024

Emergency Telephone Number

Emergency Telephone Number CHEMTREC: 1-800-424-9300 for US/703-527-3887 outside US

2. HAZARDS IDENTIFICATION

Classification

This product is considered non-hazardous by the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

1.
Serious Eye Damage/Eye Irritation Category 2

GHS Label elements. including precautionary statements

Emergency Overview

Signal Word **Warning**
Hazard Statements
May be harmful if swallowed
Causes serious eye irritation

Appearance: Colorless to Light Yellow

Physical State: Liquid

Precautionary Statements

Prevention

- Wash face, hands and any exposed skin thoroughly after handling.
- Wear eye/face protection.

General Advice

- None

Eyes

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.

Storage

- None

Disposal

- None

Hazard Not Otherwise Classified (HNOC)

Not applicable

3. COMPOSITION INFORMATION ON INGREDIENTS

The composition of this product is proprietary. In the event of a medical emergency, compositional information will be revealed to a physician of nurse. **This product is Non-Hazardous as defined in 29 CFR 1910.1200.**

4. FIRST AID MEASURES

Description of necessary first-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Remove from exposure, lie down. If symptoms persist, call a physician.
Ingestion	Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms/effects. acute and delayed

Most Important Symptoms/Effects Irritation

Indication of immediate medical attention and special treatment needed. if necessary

Notes to Physician Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical
No information available.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions. protective equipment and emergency procedures

Personal Precautions	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spililleak. Do not touch or walk through spilled material.
Advice for emergency responders	Wear personal protective equipment.

Environmental Precautions

Environmental Precautions	Avoid release to the environment. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material
Methods for Cleaning Up	Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practices. Wear PPE

Conditions for safe storage. including any incompatibilities

Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.
Incompatible Products	None known based on information supplied.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Appropriate engineering controls

Engineering Measures	Provide local exhaust ventilations system When there is a potential for exposure, an emergency eyewash and safety shower should be provided within the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear safety glasses with non-flexible side shields or chemical goggles A face shield should be worn if a potential for splashing or spraying exists.
Skin and Body Protection	Wear appropriate protective, impervious clothing. Wear appropriate protective non-leather protective gloves and boots. Chemical protective gloves and boots such as PVC, Neoprene, or Heavy Nitrile are recommended. Leather products do not offer adequate protection and will dehydrate with resultant shrinkage and possible destruction
Respiratory Protection	A respirator is not indicated under normal operating conditions. Use of a NIOSH - approved respirator (N95 or greater) should be based on the presence of nuisance dusts.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	**Liquid**	**Appearance**	**Colorless/Light Yellow**
Odor	**Citris**	**Odor Threshold**	**No information available**

Property	**Values**	**Remarks - Method**
pH	6.5 – 7.5	None known
Melting Point/Range	Not determined	None known
Boiling Point/Boiling Range	118°C / 244°F	None known
Flash Point	>93°C (200°F).	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)		None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	< 0.1 mmHg @ 68°F (20°C)	None known
Vapor Density	No data available	None known
Specific Gravity	.99@25°C (77°F)	None known
Water Solubility	Completely soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	Not determined	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	1.79 mPa*s	None known

Flammable Properties	Not flammable
Explosive Properties	No data available

Oxidizing Properties No data available

Other information

VOC Content (%) Not applicable.

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation.
Eye Contact	Irritating to eyes.
Skin Contact	Slightly toxic by dermal absorption.
Ingestion	Moderately toxic by ingestion.

Symptoms related to the physical. chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.
Reproductive Toxicity	No information available.

STOT - single exposure	No information available.
STOT • repeated exposure	No information available.
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Persistence and Degradability	No information available.
Bioaccumulation	

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.
Contaminated Packaging	Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT - Not Regulated

15. REGULATORY INFORMATION

International Inventories

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSUNDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 3111312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard 1**	**Flammability 0**	**Instability 0**	**Physical and Chemical Hazards -**
HMIS	**Health Hazard 1**	**Flammability 0**	**Physical Hazard 0**	**Personal Protection X**

Issuing Date	10-0ec-2014
Revision Date	10-0ec-2014
Revision Note	Initial Release.

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

GeoPerc™

PRODUCT DATA SHEET

DESCRIPTION

GeoPerc™ is a pre-mix of proprietary surfactants and surface tension reducers.

PERFORMANCE

GeoPerc™ is a surfactant pre-mix solution for use in remediation on contaminated soils. ***GeoPerc™*** when added to irrigation water or dilutions of ***ReNew™*** or ***RxDP™*** improves percolation and soil cleansing.

PHYSICAL PROPERTIES

Appearance	Viscous Amber Liquid
Weight	42 lbs. per 5 gallons
pH (as is)	9.0 -10.0

APPLICATION

GeoPerc™ should be added to dilutions of chemical amendments or to irrigation water at a rate of 5 gallons per 4000 gallons. No special equipment is required, but thorough blending is recommended for best results.

AVAILABILITY

5 gallon pails

SAFETY AND HANDLING

GeoPerc™ is a non-toxic, non-hazardous solution and is not subject to DOT regulations. Protective clothing, rubber gloves, and either a face-shield or safety goggles are recommended. For further details, follow the Safety Data Sheet.

TECHNICAL SUPPORT

Technical assistance is available from personnel with extensive product knowledge and experience. Chemical engineers, chemists and lab technicians are on hand to provide customer support and assistance. Technical assistance is available by calling your **Environmental Recovery** sales representative.

ENVIRONMENTAL RECOVERY
OILFIELD SERVICES & CONSULTING

Geo-Perc™ SAFETY DATA SHEET

Issuing Date 10-0ec-2014 **Revision Date** 10-Dec-2014

Revision Number 0

1. IDENTIFICATION

GHS product identifier

Product Name *GeoPerc™*

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use For Soil Amendment

Uses Advised Against No information available

Distributor's Details

Environmental Recovery
7555 Katy Freeway #161
Houston, TX. 77024

Emergency Telephone Number

Emergency Telephone Number CHEMTREC: 1-800-424-9300 for US/703-527-3887 outside US

2. HAZARDS IDENTIFICATION

Classification

This product is considered non-hazardous by the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

Serious Eye Damage/Eye Irritation Category 2

GHS Label elements. including precautionary statements

Emergency Overview

Signal Word **Warning**

Hazard Statements

May be harmful if swallowed
Causes serious eye irritation

Appearance: Colorless to Amber

Physical State: Viscous Liquid

Precautionary Statements

Prevention

- Wash face, hands and any exposed skin thoroughly after handling.
- Wear eye/face protection.

General Advice

- None

Eyes

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.

Storage

- None

Disposal

- None

Hazard Not Otherwise Classified (HNOC)

Not applicable

3. COMPOSITION INFORMATION ON INGREDIENTS

The composition of this product is proprietary. In the event of a medical emergency, compositional information will be revealed to a physician of nurse. **This product is Non-Hazardous as defined in 29 CFR 1910.1200.**

4. FIRST AID MEASURES

Description of necessary first-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Remove from exposure, lie down. If symptoms persist, call a physician.

Ingestion Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms/effects. acute and delayed

Most Important Symptoms/Effects Irritation

Indication of immediate medical attention and special treatment needed. if necessary

Notes to Physician Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical
No information available.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions. protective equipment and emergency procedures

Personal Precautions	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill leak. Do not touch or walk through spilled material.
Advice for emergency responders	Wear personal protective equipment.

Environmental Precautions

Environmental Precautions	Avoid release to the environment. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material
Methods for Cleaning Up	Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practices. Wear PPE

Conditions for safe storage. including any incompatibilities

Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.
Incompatible Products	None known based on information supplied.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Appropriate engineering controls

Engineering Measures	Provide local exhaust ventilations system When there is a potential for exposure, an emergency eyewash and safety shower should be provided within the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear safety glasses with non-flexible side shields or chemical goggles A face shield should be worn if a potential for splashing or spraying exists.
Skin and Body Protection	Wear appropriate protective, impervious clothing. Wear appropriate protective non-leather protective gloves and boots. Chemical protective gloves and boots such as PVC, Neoprene, or Heavy Nitrile are recommended. Leather products do not offer adequate protection and will dehydrate with resultant shrinkage and possible destruction
Respiratory Protection	A respirator is not indicated under normal operating conditions. Use of a NIOSH - approved respirator (N95 or greater) should be based on the presence of nuisance dusts.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	**Liquid - Viscous**	**Appearance**	**Colorless/Amber**
Odor	**Odorless**	**Odor Threshold**	**No information available**

Property	Values	Remarks - Method
pH	5..0 – 7.0	None known
Melting Point/Range	59°F (15°C)	None known
Boiling Point/Boiling Range	>490°F (>250°C)	None known
Flash Point	315°F (158°C)	None known
Evaporation rate	Not applicable.	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Specific Gravity	.098 @ 25°F	None known
Water Solubility	Completely soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	Not determined	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not flammable	
Explosive Properties	No data available	

Oxidizing Properties No data available

Other information

VOC Content (%) Not applicable.

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation.
Eye Contact	Irritating to eyes.
Skin Contact	Slightly toxic by dermal absorption.
Ingestion	Moderately toxic by ingestion.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.
Reproductive Toxicity	No information available.

STOT - single exposure	No information available.
STOT • repeated exposure	No information available.
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Persistence and Degradability No information available.

Bioaccumulation

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT - Not Regulated

15. REGULATORY INFORMATION

International Inventories

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSUNDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 3111312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard 1**	**Flammability 0**	**Instability 0**	**Physical and Chemical Hazards -**
HMIS	**Health Hazard 1**	**Flammability 0**	**Physical Hazard 0**	**Personal Protection X**

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Revision Note	Initial Release.

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

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