SAFETY DATA SHEET
EDS-ER™

Creation Date: 2/1/2019
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Version 1.2
SDS # 01A

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifier

Product Name: EDS-ER™

Synonyms: Electron Donor Solution – Extended Release

Product Form: Mixture

1.2 Recommended use of the chemical and restrictions on use

Recommended Use: Remediation of contaminated groundwater and soils.
Restrictions on Use: Use as recommended by the label.

1.3 Details of the supplier and of the safety data sheet

Supplier
Tersus Environmental, LLC
1116 Colonial Club Rd
Wake Forest, NC 27587
Phone: +1-919-453-5577
Email: info@tersusenv.com

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:

+1-919-453-5577 (Tersus Office Hours, 8:00 AM to 5:00 PM Eastern)
+1-800-424-9300 (Chemtrec 24 Hour Service – Emergency Only)

2. HAZARD IDENTIFICATION

2.1 Relevant identified uses of the substance or mixture

No applicable GHS categories. This product is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards None known.

2.2 Label element The product does not require a hazard warning label in accordance with GHS. The normal safety precautions for the handling of chemicals must be observed.

Hazard statement Non-Regulated Material

Precautionary statement

Prevention No GHS prevention statements
Response No GHS response statements
Storage No GHS storage statements
Disposal No GHS disposal statements

2.3 Classification system

NFPA Ratings (scale 0-4)
Health = 0
Fire = 1
Reactivity = 0

HMIS Ratings (scale 0-4)
Health = 0 Flammability = 1 Reactivity = 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Formula Mixture

3.2 Hazardous components

Chemical Name	Concentration (%)	CAS Number
None	None	None

3.3 Nonhazardous components

Chemical Name	Concentration (%)	CAS Number
Soybean Oil	90 to 93	8001-22-7
Emulsifiers	7 to 10	Proprietary

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Synonyms are provided in Section 1.
Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

4.1 General Information

Check the vital functions. If unconscious place in recovery position and seek medical advice. In case of respiratory arrest, administer artificial respiration. Cardiac arrest, perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Take the victim to a doctor if irritation persists.

Remove affected person from source of contamination.

Eye Contact

Promptly wash eye with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention. Do not apply (chemical) neutralizing agents. In case of eye irritation consult an ophthalmologist. Remove any contact lenses and open eyelids wide apart.

Skin Contact

Wash off promptly and flush contaminated skin with water. Promptly remove clothing of soaked through and flush skin with water. Get medical attention if irritation persists after washing. Do not apply (chemical) neutralizing agents.

Inhalation

Move the exposed person to fresh air at once. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Perform artificial respiration if breathing has stopped. Keep the affected person warm and at rest. Get prompt medical attention.

Ingestion	Drink plenty of water. DO NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person. Keep the affected person warm and at rest.
4.2 Important symptoms and effects (acute and delayed)	Symptoms/injuries after skin contact: Causes skin irritation. Symptoms/injuries after eye contact: Eye damage / irritation.

5. FIRE-FIGHTING MEASURES

5.1 Suitable Extinguishing Media	Alcohol resistant foam. Carbon dioxide (CO2). Dry chemicals, sand, dolomite, etc. Water spray
5.2 Specific Hazards Arising from the chemical or mixture	Fire hazard: high. Explosion hazard: Not known. Oxides of the following substances: Carbon, Sulfurous gases (SOx)
5.3 Special Fire Fighting Procedures	Cool containers exposed to flames with water until well after the fire is out. Use water spray to reduce vapors. If the risk of water pollution occurs, notify appropriate authorities. Avoid water in straight hose stream; will scatter and spread fire. Keep upwind. Do not inhale explosions and combustion gases. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Cool containers exposed to flames with water until well after the fire is out. Use water spray to reduce vapor. If the risk of water pollution occurs, notify appropriate authorities. Avoid water in straight hose stream; will scatter and spread fire. Wear positive-pressure, self-contained breathing apparatus (SCBA) and chemical protective clothing.
5.4 Unusual Fire and Explosion Hazards	Rags containing this material may heat and burn spontaneously. If a material with a large surface area, like rags, filters etc., is saturated with vegetable oils spontaneous combustion has been known to happen

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Do not smoke or use open fire or other sources of ignition. Contact with walking surface may result in formation of slippery film/falling hazard.
6.2 First Aid	In case of contact with skin, wash with soap and water. If symptoms occur, seek medical attention. In case of contact with eyes, rinse with plenty of water for at least 15 minutes and see an eye specialist if irritation persists. In case of inhalation, remove to fresh air. In case of ingestion, drink water. If symptoms occur, seek medical assistance.
6.3 Environmental Precautions	Do not discharge into drains, sewers, or watercourses or onto the ground. Inform the relevant authorities if this occurs.
6.4 Methods for Containment and Clean Up	Spilled product should be removed immediately. Provide enough ventilation. Recover product for reuse if possible. Avoid contamination of waterways and (if large quantity) vegetation. Absorb in non-

combustible material, vermiculite, dry sand or earth and place into containers. If in mist form and levels are above 12mg/m3(total), an air purifying respirator (APR) and goggles are recommended Avoid runoff into storm sewers and ditches which lead to waterway.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Contain with applicable regulations. Avoid contact with eyes. Avoid inhalation of vapors and spray/mist. Remove contaminated clothing immediately. Clean contaminated objects and areas thoroughly observing environmental regulations. Keep away from sources of ignition – No smoking. Handle in accordance with good industrial hygiene and safety procedures. Discharge into the environment must be avoided. Keep container tightly closed. Either local exhaust or general room ventilation is usually required.

7.2 Hygiene measures

Handle in accordance with good industrial hygiene and safety procedures. Use good personal hygiene practices.

7.3 Conditions for safe storage (with incompatibilities)

Technical measures: Clean bulk tanks periodically to prevent accumulation of bacteria
Storage conditions: Store in tightly closed, original container in a well-ventilated place. Protect against frost. Protect against direct sunlight.
Storage temperature: See technical datasheet. Above 10°C (50°F) and away from heat or flame.
Storage area: Store in a dry area. Comply with applicable regulations. Collect spillage.
Packaging materials: Stainless steel. Plastic.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

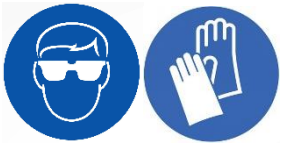
8.1 Control parameters

Exposure guidelines, ingredients with workplace control parameters.

Components with occupational exposure limits

Soybean Oil (8001-22-7)
TWA Short-term value: 5 mg/m3
Long-term value: 15 mg/m3

8.2 Exposure Control



Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients. Do not allow uncontrolled discharge of product into the environment.

Eye/face protection

The following protection should be worn: Chemical splash goggles.

Respiratory protection	An approved NIOSH respirator must be worn if exposed to excessive oil vapors
Hand protection	Neoprene. Vinyl, Rubber (natural, latex), Butyl rubber. Wear protective gloves made of the following material: Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Polyvinyl chloride (PVC). Manufactured/tested in accordance with EN 374, Avoid the following conditions: Polyvinyl alcohol (PVA).
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact. If using hot oil, insulated gloves may be required
Hygiene measures	Wash promptly if skin becomes contaminated. Wash hands at the end of each work shift and before eating, smoking, and using the toilet. When using do not eat, drink, or smoke.
Environmental Exposure Controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Clear yellow to clear brown, amber
Odor	Light Vegetable Oil
Odor threshold	Not determined.
pH	Not determined. Natural when diluted with water.
Melting point /Freezing Point	-2°C
Initial Boiling point and boiling point range	Not determined.
Flash Point	282°C (540°F)
Evaporation rate	Not determined.
Flammability (solid; gas)	Not determined.
Upper/lower flammability or explosive limits	Not determined.
Vapor pressure	Not determined.
Vapor density	Not determined.
Relative density	0.925 g/cm3 (7.719 lbs/gal)
Solubility (ies)	Dispersible
Partition coefficient: n-octanol/water	Not determined.
Initial Boiling point and boiling point range	Not determined.
Auto-ignition temperature	Unknown
Decomposition temperature	Unknown
Viscosity	80 cP at 24°C; 35 cSt at 40°C

10. STABILITY AND REACTIVITY

10.1 Reactivity No further relevant information available.

10.2 Chemical stability	Stable under normal conditions and use.
10.3 Possibility of hazardous reactions	No dangerous reactions known.
10.4 Conditions to avoid	No further relevant information available.
10.5 Incompatible materials	No further relevant information available.
10.6 Hazardous decomposition products	Oxides of carbon (CO_x).
10.7 Hazardous Polymerization	Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

11.1 Acute Toxicity

Acute toxicity (oral)	LD50 Species: Rat (male/female) Dose: >2.000 mg/kg Method: OECD 423
Skin	Acute toxicity estimate: 3,571 mg/kg Method: Calculation method
Serious Eye Damage/Irritation	Not classified
Respiratory or Skin Sensitization	Not classified
Ingestion	Not classified
Germ Cell Mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive Toxicity	Not classified
Specific Target Organ Toxicity (Single Exposure)	Not classified
Specific Organ Toxicity (Repeated Exposure)	Not classified
Aspiration Hazard	Not classified
General Remarks	Not classified
Repeated does toxicity	> 5000 mg/Kg bw/day [OECD 422, CAS# 8001-30-7]
Reproductive toxicity	> 2000 mg/Kg bw/day [OECD 422, CAS# 8001-30-7]

11.2 Additional Toxicological Information

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us. The substance is not subject to classification.

11.3 Carcinogenic Categories

11.3.1 IRAC (International Agency for Research on Cancer): No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

11.3.2 ACGIH (American Conference of Governmental Industrial Hygienists): No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by ACGIH.

11.3.3 NTP (National Toxicology Program): No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by NTP.

11.3.4 OSHA (Occupational Safety & Health Administration): No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

12. ECOLOGICAL INFORMATION

12.1 Chemical Fate Information
Product is readily biodegradable in wastewater treatment systems.

12.2 Biodegradability
Slow, not readily degradable Method: OECD 301 D
Chemical Oxygen Demand: 2.324 mg/g DIN 38409 T.31

12.3 Toxicity
Acute toxicity to fish- LC0: >100 mh/L 96h (no data, OCED 203, s-s)
Acute toxicity to aquatic invertebrates: No data
Toxicity to aquatic algae: No data
Toxicity to microorganisms- EC50: >100 mg/L 3 h (a.s. bacteria, OCED 209, s)

12.4 Bioaccumulative potential
No data available

12.5 Aquatoxicity, invertebrates
Species: *Daphnia magna*
Exposure duration: 48 h
EC50: > 100 mg/l
Method: OECD 202

12.6 Aquatoxicity, algae / aquatic plants
Species: *Scenedesmus subspicatus*
Exposure duration: 72 h
EbC50: 341 mg/l
Method: OECD 201

12.7 Mobility in soil
Adsorption coefficient in soil (log Koc): no data

12.8 Results of PBT and vPvB assessment
The substance is not PBT or vPvB

12.9 Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Methods Dispose according to federal, state, and local laws. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Authority. Waste is suitable for incineration.

14. TRANSPORTATION INFORMATION

14.1 U.S. (D.O.T.)

Proper Shipping Name:	Chemicals not otherwise indexed (NOI) nonhazardous.
Hazard Class:	N/A
UN/NA:	N/A
Labels:	N/A

14.2 Canada (T.D.G.)

Proper Shipping Name:	Chemicals not otherwise indexed (NOI) nonhazardous.
Hazard Class:	N/A
UN/NA:	N/A
Labels	N/A

14.3 IMDG

Proper Shipping Name:	Chemicals not otherwise indexed (NOI) nonhazardous.
Hazard Class:	N/A
UN/NA:	N/A
Labels:	N/A

14.4 IATA

Proper Shipping Name:	Chemicals not otherwise indexed (NOI) nonhazardous.
Hazard Class:	N/A
UN/NA:	N/A
Labels:	N/A

14.5 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

N/A for product as supplied.

15. REGULATORY INFORMATION

15.1 EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

15.2 SARA 311/312 Hazards No SARA Hazards

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

15.3 California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

15.4 The components of this product are reported in the following inventories

CH INV:	On the inventory, or in compliance with the inventory
DSL:	All components of this product are on the Canadian DSL
AICS:	On the inventory, or in compliance with the inventory

NZIoC:	On the inventory, or in compliance with the inventory
ENCS:	On the inventory, or in compliance with the inventory
KECI:	Not in compliance with the inventory
PICCS:	On the inventory, or in compliance with the inventory
IECSC:	On the inventory, or in compliance with the inventory
TCSI:	On the inventory, or in compliance with the inventory
TSCA:	On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

16.1 Abbreviation/acronyms used

UVCB (substance)- Chemical substances of Unknown or Variable Composition, complex reaction products and biological materials
CAS (number)- Chemical Abstracts Service
EC (number)- Ref. EINECS/ELINCS number
R.E.A.Ch.- Registration, Evaluation, Authorisation and Restriction of Chemicals
TARIC - Tariffa Integrata della Comunità (Integrated Community Tariff code)
GHS - Globally Harmonised System of Classification and Labelling of Chemicals
CLP - Classification, Labelling and Packaging regulation
n/a - not apllicable
PPE - Personal Protection Equipment
(Q)SAR - (Quantitative) Structure-Activity Relationship
bw – body weight
NOAEL - No Observed Adverse Effect Levels
STOT - Specific Target Organ Toxicity
BCF - Bioconcentration Factor
PBT (substance) - Persistent Bioaccumulative Toxic
vPvB (substance) - very Persistent, Very Bioaccumulative
SVHC (substance) - Substances of Very High Concern

Components not precisely identified are proprietary or non-hazardous.

Mixture classified as not dangerous according to Regulation (EC) 1272/2008.

Observe employment restrictions for people.

Product is not listed with IARC, NTP, ACGIH or OSHA as a carcinogen.

Disclaimer: The information contained in this Safety Data Sheet (SDS), as of the issue date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty, express or implied, or guarantee. Tersus Environmental, LLC urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. Since we cannot control the application, use or processing of the product, we do not accept responsibility. Therefore, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product and ensure that the intended use of the product will not infringe any party's intellectual property right. The information presented here pertains only to the product as shipped.

All recommendations for the use of our products, whether given by us, orally or to be implied from data or lab tests results by us, are based on the current state of our knowledge at the time those recommendations are made. When additional information is obtained, these recommendations may be

updated. They may also be influenced by circumstances outside our control. Notwithstanding such recommendation the user is responsible for ensuring that the product supplied by us is suitable for the process or purpose he/she intends to use it.

Due to the proliferation of sources for information such as manufacturer specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

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End of Safety Data Sheet