

Safety Data Sheet

OS-20

SECTION I - IDENTIFICATION



Greenwell Energy Solutions
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Product Number OS-20
Product Name OS-20
Chemical Family Oxygen Scavenger
CAS Number Multiple
Date Prepared 5/16/2018
Revision Number
Recommended Use Various Industrial Uses

SECTION II - HAZARDOUS IDENTIFICATION

GHS CLASSIFICATION:

Classification

Acute Toxicity, Oral	Category 4
Aspiration Hazard	Category 1
Skin Corrosion/Irritation	Category 1B
Sensitization, Skin	Category 1
Serious Eye Damage/Eye Irritation	Category 2A
Hazardous to the aquatic environment, long-term hazard	Category 3

DANGER!

GHS LABEL:



Hazard Statements

H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H314	Causes severe burns and eye damage
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects

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Precautionary Statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash... thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301+330+331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+352	IF ON SKIN: Wash with plenty of water/...
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+340	IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so - continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P321	Specific treatment (see ... on this label).
P330	Rinse mouth.
P331	Do NOT induce vomiting.
P333+313	If skin irritation or a rash occurs: Get medical advice/attention.
P337+313	If eye irritation persists get medical advice/attention.
P362+364	Take off immediately all contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/container to...

SECTION III - COMPOSITION/INFORMATION ON INGREDIENTS

The precise composition of this product is proprietary information. In the event of a medical emergency, a complete disclosure will be provided to medical personnel.

Component Name	CAS #	Component%	OSHA PEL	ACGIH TLV
Ammonium bisulfite	10192-30-0	40-55%	Not Established	Not Established
Water	7732-18-5	Balance	Not Established	Not Established

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SECTION IV - FIRST AID MEASURES

- Contact with eyes:** Flush with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention.
- Skin contact:** Wash exposed areas with water and mild soap. Remove contaminated clothing immediately and launder before reuse. If irritations persist, seek immediate medical attention.
- Inhalation:** Remove victim to fresh air. Administer oxygen or artificial respiration if breathing is affected or stopped. Seek immediate medical attention.
- Ingestion:** If SWALLOWED: Call a poison control center immediately. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without medical advice. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical advice.

SECTION V - FIREFIGHTING MEASURES

- Suitable Extinguishing Media:** Alcohol resistant foam, carbon dioxide, regular dry chemical, water
Do not use a direct stream of water. Product will float and can be reignited on surface of water.
- Special Fire Fighting Procedures:** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may be ineffective fighting fires. Avoid water stream on molten burning material as it may scatter and spread the fire.
- Unusual Fire Fighting Hazards:** SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, firefighting foam, or Halon.
LARGE FIRES: Water spray, fog or firefighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

SECTION VI - ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. Use appropriate safety equipment.
- Environmental Precautions:** Contain spill if it can be done with minimal risk. Prevent liquid from entering drains, sewers or waterways. Notify proper authorities.
- Methods for Cleaning Up:** Small Spill: Clean up with shovel and broom. Move other containers from spill area. Absorb spill material with an inert absorbent. Use spark proof tools while working in spill area. Contaminated absorbent material may pose same hazards as the spilled product. Dispose of any materials using approved disposal methods. Contact Greenwell Environmental Affairs after area is secure.

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Large Spill: Move other containers from spill area. Absorb spill material with an inert absorbent. Approach area from upwind. Dike spill area and do not allow spilled material to reach water systems or drainage systems. Use spark proof tools while working in spill area. Dispose of any materials using approved disposal methods. Contaminated absorbent material may pose same hazards as the spilled product. Contact Greenwell Environmental Affairs after area is secure.

SECTION VII - HANDLING AND STORAGE

Handling and Storage:

- Avoid prolonged breathing of mist or vapor. Wash thoroughly after handling. Vent container carefully before opening. Bond and ground all equipment when transferring from one vessel to another. The use of explosion-proof equipment is recommended. "Empty" containers retain residue and/or vapor and may be dangerous. Do not cut, weld, braze solder, drill, grind or expose such containers to heat, flames, sparks, or other ignition sources. Keep containers tightly closed when not in use.

SECTION VIII - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component Name	CAS #	OSHA PEL	ACGIH TLV
Ammonium bisulfite	10192-30-0	Not Established	Not Established
Water	7732-18-5	Not Established	Not Established

Engineering Controls: Ensure adequate ventilation, especially in confined areas. Eye wash fountain and emergency showers are recommended.

Monitoring: Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

Personal Protective Equipment (PPE)

Eye Protection: Goggles or approved OSHA device with side shields; do not wear contact lenses when handling this product.

Skin Protection: Impervious solvent resistant gloves. Impervious apron and work boots recommend where splashing may occur. Gloves constructed of nitrile or neoprene are recommended. Other chemical resistant gloves are acceptable.

Respiratory Protection: Use a NIOSH-approved respirator as required to prevent overexposure. In accord with 29 CFR 1910.134, Use either a full-face, atmosphere-supplying respirator or an air-purifying respirator

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SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Yellow to clear liquid
Odor	Sulfur
pH@25°C	5.0 to 6.5
Melting/Freezing Point	Not Available
Flashpoint	Not Available
Specific Gravity	1.13
Solubility	Water Soluble
Auto-Ignition Temperature	Not Available
Decomposition Temperature	Not Available
VOC Content	Not Available
Odor Threshold	Not Available
Boiling Range	Not Available
Evaporation Point	Not Available
Flammable Limits - Upper	Not Available
Flammable Limits - Lower	Not Available
Vapor Pressure	Not Available
Vapor Density (Air=1)	Not Available
Viscosity	Not Available

SECTION X - STABILITY AND REACTIVITY

Stability:	Stable, under normal conditions of storage and handling.
Conditions to Avoid:	Not flammable in the presence of the following materials or conditions: open flames, sparks, static discharge and heat.
Hazardous Decomposition/Byproducts:	CO and CO2 Noncombusted Hydrocarbons
Hazardous Polymerization:	Will not occur.
Polymerization Conditions to Avoid:	None
Incompatibilities:	Can react with strong oxidizing agents, peroxides, alkaline products and strong acids. Contact with amines, ammonia, and some metals can create hazards. Avoid contact with Aluminum and Copper. Mildly corrosive to carbon steel.

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SECTION XI - TOXICOLOGICAL INFORMATION

Likely Route of Exposure: Contact and inhalation; ingestion possible.

Inhalation: Inhalation is not expected unless small particulates or heated to high temperatures. Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, over excitation. Exposure to very high levels can result in unconsciousness and death. Repeated over-exposure may cause liver and kidney injuries. Components of the product may affect the nervous system. Exposure to light hydrocarbons has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

Eye Contact: Causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, marked excess redness and swelling of the conjunctiva, and chemical burns of the eye

Skin Contact: Causes severe skin irritation
Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Ingestion: Aspiration hazard. Can enter the lungs during swallowing or vomiting and cause chemical pneumonia and edema.
Ingestion of liquid will cause gastrointestinal distress, irritation, possibly nausea, and can be fatal.

Acute Toxicity Value: Eye or skin contact will result in serious burns and may cause blindness.

Chronic (Long Term) Effects: See Health Hazards above.

Toxicity:

Component Name	LD50	LC50
Ammonium bisulfite	Not Established	Not Established
Water	Not Established	Not Established

Reproductive Effects Not Applicable

Teratogenicity Not Applicable

Mutagenicity Not Applicable

Embryotoxicity Not Applicable

Sensitization to Product Not Applicable

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Synergistic Products Not Applicable

Carcinogenicity Not listed as a Carcinogen

SECTION XII - ECOLOGICAL INFORMATION

Ecotoxicity: This chemical is not listed as toxic to aquatic organisms, however, does contain substances dangerous for the environment. Use care to not allow the chemical into any water way. May cause long-term adverse effects in the aquatic environment.

Mobility: Mobile in soil

Degradability: Readily biodegradable

BioAccumulation: This material is not expected to significantly bio accumulate.

SECTION XIII - WASTE DISPOSAL CONSIDERATIONS

The generation of waste should be avoided and minimized at all times. Empty containers may contain a residue of this product. Processing, use or contamination of the product may change the waste management options. Must not be disposed of together with household garbage. Any unused product should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility.

SECTION XIV - TRANSPORT INFORMATION

DOT SHIPPING INFORMATION

Proper Shipping Name: UN2693 Bisulfates, Aqueous solution, n.o.s., 8 PGIII

Contains: Ammonium Bisulfite

Hazard Class and Label: 8

Identification Number: UN2693

Packaging Group: III

Other Shipping Info: ERG 154

SECTION XV - REGULATORY INFORMATION

TSCA STATUS:..... The components of this product are listed on the TSCA Inventory

SARA TITLE III SECTION 302/304 EXTREMELY HAZARDOUS SUBSTANCE:

No chemicals in this material are subject to the reporting requirements.

SARA TITLE III SECTION 311/312 HAZARD CATEGORIZATION:

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Acute	Chronic	Fire	Pressure	Reactive
X				

SARA TITLE III SECTION 313 SUPPLIER INFORMATION:

No chemicals in this material are subject to the reporting requirements.

CERCLA SECTION 102(a) HAZARDOUS SUBSTANCE:

Component Name	CAS #	% by wt.	RQ (lbs.)
Ammonium bisulfite	10192-30-0	40-55%	5,000

CALIFORNIA PROPOSITION 65:

No chemicals in this material are subject to the reporting requirements.

SECTION XVI - OTHER INFORMATION

HMIS Health: 3

HMIS Flammability: 0

HMIS Reactivity: 0

Additional:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.