MicroVert+ XR

SECTION 1: Identification

Product Identifier

Product Name: MicroVert+ XR

Recommended Use of the Product and Restriction on Use

Relevant Identified Uses: Far field diverting agent for injected fluids
Uses Advised Against: Incompatible with acid
Reasons Why Uses Advised Against: Generates heat and releases hydrogen

Manufacturer or Supplier Details

Supplier:
United States
DiverterPlus, LLC
281 Clarkson Road
Suite 102 Ellisville, MO 63011
1-833-388-7587
solutions@diverterplus.com
diverterplus.com

Emergency Telephone Number:

United States
CHEMTREC
800-424-9300 (24 Hours)
+1 703-527-3887

SECTION 2: Hazard(s) Identification

GHS Classification:

Skin irritation, category 2
Eye irritation, category 2A
Combustible Dust

Label elements

Hazard Pictograms:

Signal Word: Warning

Hazard statements:

Combustible Dust May form combustible dust concentrations in air.
H315 Causes skin irritation
H319 Causes serious eye irritation

Precautionary Statements:

P264 Wash skin thoroughly with soap and water after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 IF ON SKIN: Wash with plenty of water/ …
P321 Specific treatment (see Sections 4-8 of this SDS and any supplemental information on the product label).
P332+P313 If skin irritation occurs: Get medical advice and attention.

P362 Take off contaminated clothing and wash it before reuse
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 If eye irritation persists: Get medical advice/attention.

Hazards Not Otherwise Classified: None

SECTION 3: Composition/Information on Ingredients

Identification	Name	Weight %
CAS Number: 1344-09-8	Sodium Silicate	>80
CAS Number: 9051-89-2	1,4-Dioxane-2,5-Dione, 3,6-Dimethyl-, (3R,6R)-, polymer with Rel-(3R,6S)-3,6-Dimethyl-1,4-Dioxane-2,5-Dione and (3S,6S)-3,6-Dimethyl-1,4-Dioxane-2,5-Dione	<10
CAS Number: 31566-31-1	Stearic acid, monoester with glycerol	<10

Additional Information: None

SECTION 4: First Aid Measures

Description of First Aid Measures

General Notes:

Show this Safety Data Sheet to the doctor in attendance.

After Inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. If respiratory symptoms develop or persist, seek medical advice/attention.

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If symptoms develop or persist, seek medical advice/attention.

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If experiencing respiratory symptoms, seek medical advice/attention.

After Skin Contact:

Wash affected area with plenty of soap and water. Remove contaminated clothing and launder before reuse. If skin irritation develops or persists, seek medical advice/attention.

Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse. If symptoms develop or persist, seek medical advice/attention.

After Eye Contact:

Immediately rinse eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. If eye irritation develops or persists, seek medical advice/attention.

Rinse eyes with plenty of water for several minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

Rinse eyes with plenty of gently flowing lukewarm water for 15 minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

After Swallowing:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

Most Important Symptoms and Effects, Both Acute and Delayed

Acute Symptoms and Effects:

Product presents an explosion hazard when suspended in air under certain conditions. Inhalation of large amounts of dust may cause inflammation and irritation of the nose and throat. Symptoms may include cough, sore throat, tightness of the chest, chest pain and lightheadedness.

Skin contact may result in redness, pain, burning and inflammation.

Eye contact may result in irritation, redness, pain, inflammation, itching, burning and tearing.

Delayed Symptoms and Effects:

Effects are dependent on exposure (dose, concentration, contact time).

Immediate Medical Attention and Special Treatment

Specific Treatment:

Not determined or not applicable.

Notes for the Doctor:

Treat symptomatically.

SECTION 5: Firefighting Measures

Extinguishing Media

Suitable Extinguishing Media:

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

Dry chemical, sand and carbon dioxide.

Unsuitable Extinguishing Media:

Do not use water jet.

Do not use water, halogenated extinguishing agents and alcohol-based foam.

Specific Hazards During Fire-Fighting:

Thermal decomposition may produce irritating/toxic fumes/gases.

May form combustible dust concentrations in air. Reacts with water and alcohols. Reacts violently with oxidants, strong acids and bases and chlorinated hydrocarbons. This generates a fire and explosion hazard. Thermal decomposition may produce irritating/toxic fumes/gases.

Special Protective Equipment for Firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA).

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode. Use shielding to protect against bursting containers.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

Special precautions:

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

Violent reactions may result from the use of a water jet or halogenated extinguishing agents. When using extinguishers, avoid dispersing combustible dust into the air. Aim extinguishers directly at the base of the flames and apply the agent as gently as possible. Overall, give preference to using medium to wide spray patterns rather than solid streams. Use only non-sparking tools. Fire fight from a protected location or

maximum possible distance. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

SECTION 6: Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures:

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling.

Evacuate unnecessary personnel. Extinguish any sources of ignition. Do not ventilate area as this may spread dust. Wear recommended personal protective equipment including suitable respiratory protection (see Section 8). Ensure no sources of electric discharge or ignition are on your person before entering area. Do not get on skin, eyes or on clothing. Avoid breathing dust, fumes. Wash thoroughly after handling. Remove contaminated clothing and launder before reuse.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

Methods and Material for Containment and Cleaning Up:

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

Avoid dust generation or stirring up of dust. Use only non-sparking tools. Ground all equipment used for recovery and clean up. Vacuum up and place in suitable containers for future disposal. Only use vacuum cleaners approved for dust collection. Dispose of in accordance with all applicable regulations (see Section 13).

Reference to Other Sections:

For personal protective equipment see Section 8. For disposal see Section 13.

SECTION 7: Handling and Storage

Precautions for Safe Handling:

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Use dust explosion proof electrical equipment and lighting. Avoid dust generation and dispersal of dust in air. Dust deposits should not be allowed to accumulate on surfaces. Clean dust residues at regular intervals. Do not use brooms or compressed air hoses to clean surfaces. Only use vacuums approved for dust collection. Use only non-sparking tools. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions such as electrical grounding and bonding or inner atmospheres. Keep containers tightly closed and grounded when not in use. Workers whose clothing may have been contaminated should change into non-contaminated clothing before leaving the work premises. Contaminated clothing should be segregated in such a manner so that there is no direct personal contact by personnel who handle, dispose or clean the clothing. Contaminated clothing should not be allowed out of the workplace. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10).

Conditions for Safe Storage, Including Any Incompatibilities:

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).
Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Outside or detached storage is preferred. Inside storage should be in a standard flammable storage cabinet. Store away from incompatible materials (See Section 10).

SECTION 8: Exposure Controls/Personal Protection

Only those substances with limit values have been included below.

Occupational Exposure Limit Values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
ACGIH	Stearic acid, monoester with glycerol	31566-31-1	8-Hour TWA: 3 mg/m³ (Stearates (except stearates of toxic metals), respirable fraction)
	Stearic acid, monoester with glycerol	31566-31-1	8-Hour TWA: 10 mg/m³ (Stearates (except stearates of toxic metals), inhalable fraction)

Biological Limit Values:

No biological exposure limits noted for the ingredient(s).

Information on Monitoring Procedures:

Not determined or not applicable.

Appropriate Engineering Controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).
This product is a combustible material which may be ignited by friction, heat, sparks or flames. It is recommended that all dust control equipment (such as local exhaust ventilation and material transport systems) involved in handling this product contain explosion relief vents or an explosion suppression system. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area. Keep static electricity under control, which includes the bonding and grounding of equipment. Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).
Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Personal Protection Equipment

Eye and Face Protection:

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).
Use safety glasses with side shields or goggles. Do not wear contact lenses when handling or processing this product. Use eye protection equipment that has been tested and approved by recognized national

standards (or equivalent).

Skin and Body Protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

General Hygienic Measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Contaminated clothing should be removed and separated for decontamination. Do not allow contaminated work clothing out of the workplace. Perform routine housekeeping.

SECTION 9: Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance	White Powder
Odor	Odorless
Odor threshold	Not determined or not available.
pH	11.3
Melting point/freezing point	Not available
Initial boiling point/range	Not available
Flash point (closed cup)	The product is not flammable
Evaporation rate	Not applicable
Flammability (solid, gas)	The product is not flammable
Upper flammability/explosive limit	Not determined or not available.
Lower flammability/explosive limit	Not determined or not available.
Vapor pressure	Not determined or not available.
Vapor density	Not determined or not available.
Density	Not determined or not available.
Relative density	1.4
Solubilities	Slowly soluble in water
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	Not determined or not available.

Decomposition temperature	1100°C
Dynamic viscosity	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Explosive properties	None
Oxidizing properties	None

SECTION 10: Stability and Reactivity

Reactivity:
Not reactive under recommended handling and storage conditions.

Chemical Stability:
Stable under recommended handling and storage conditions.

Possibility of Hazardous Reactions:
Hazardous reactions are not anticipated under recommended conditions of handling and storage.

Conditions to Avoid:
Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.
Extreme heat, open flames, hot surfaces, sparks, static discharge, ignition sources, dust generation and accumulation and incompatible materials.
Gels and generates heat when mixed with acid

Incompatible Materials:
Acids

Hazardous Decomposition Products:
Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Produces hydrogen when mixed with acid

SECTION 11: Toxicological Information

Acute Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

Route	Result
Oral	LD50 Rats: 3200 mg/kg (Single dose)

Substance Data:

Name	Route	Result
Stearic acid, monoester with glycerol	oral	LD50 Mouse: >5000 mg/kg
	dermal	LD50 Rat: >2000 mg/kg

Skin Corrosion/Irritation

Assessment:
Causes skin irritation.

Product Data:
No data available.

Substance Data: No data available.

Serious Eye Damage/Irritation

Assessment:
Causes serious eye irritation.

Product Data:
No data available.

Substance Data: No data available.

Respiratory or Skin Sensitization

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data: No data available.

International Agency for Research on Cancer (IARC):

Name	Classification
1,4-Dioxane-2,5-Dione, 3,6-Dimethyl-, (3R,6R)-, polymer with Rel-(3R,6S)-3,6-Dimethyl-1,4-Dioxane-2,5-Dione and (3S,6S)-3,6-Dimethyl-1,4-Dioxane-2,5-Dione	Not Applicable
Stearic acid, monoester with glycerol	Not Applicable

National Toxicology Program (NTP):

Name	Classification
1,4-Dioxane-2,5-Dione, 3,6-Dimethyl-, (3R,6R)-, polymer with Rel-(3R,6S)-3,6-Dimethyl-1,4-Dioxane-2,5-Dione and (3S,6S)-3,6-Dimethyl-1,4-Dioxane-2,5-Dione	Not Applicable
Stearic acid, monoester with glycerol	Not Applicable

OSHA Carcinogens: Not applicable

Germ Cell Mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Reproductive Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Specific Target Organ Toxicity (Single Exposure)

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Specific Target Organ Toxicity (Repeated Exposure)

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Information on Likely Routes of Exposure:

No data available.

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics:

No data available.

Other Information:

No data available.

SECTION 12: Ecological Information

Acute (Short-Term) Toxicity

Assessment:

The following data is reported for chemically similar sodium silicates on a 1000% solids basis: LC50 (96 hour) for fish (Danio rerio) of 1108 ppm at MR 3.46; EC50 (48 hour) for invertebrates (Daphnia magna) of 1700mg/l at MR 3.20; ErC50 and EbC50 (72 hour) for algae (Scenedesmus subspicatus) is 345 mg/l and 207 mg/l at MR 3.0; EC0 (18 hour) for microorganisms (Pseudomonas putida) of 3480 mg/l at MR 3.46

Product Data: No data available.

Substance Data: No data available.

Chronic (Long-Term) Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data: No data available.

Persistence and Degradability

Product Data: No data available.

Substance Data:

Name	Result
Stearic acid, monoester with glycerol	The substance is readily biodegradable (read-across substance showed 69 - 95% degradation after 28 days, measured by Oxygen consumption).

Bioaccumulative Potential

Product Data: No data available.

Substance Data: No data available.

Mobility in Soil

Product Data: No data available.

Substance Data:

Name	Result
Stearic acid, monoester with glycerol	Log Koc: 2 - 7.9

Results of PBT and vPvB assessment

Product Data:

PBT assessment: This product does not contain any substances that are assessed to be a PBT.

vPvB assessment: This product does not contain any substances that are assessed to be a vPvB.

Substance Data:

PBT assessment:

Stearic acid, monoester with glycerol	The substance is not PBT.

vPvB assessment:

Stearic acid, monoester with glycerol	The substance is not vPvB.

Other Adverse Effects: No data available.

SECTION 13: Disposal Considerations

Disposal Methods:

Disposed material is not a Hazardous waste. Dispose in accordance with federal, state, and local regulations and permits.

Contaminated packages:

Not determined or not applicable.

SECTION 14: Transport Information

United States Transportation of Dangerous Goods (49 CFR DOT)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

International Maritime Dangerous Goods (IMDG)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

SECTION 15: Regulatory Information

United States Regulations

Inventory Listing (TSCA): All ingredients are listed-active or exempt.
Significant New Use Rule (TSCA Section 5): None of the ingredients are listed.
Export Notification under TSCA Section 12(b): None of the ingredients are listed.
SARA Section 302 Extremely Hazardous Substances: None of the ingredients are listed.
SARA Section 313 Toxic Chemicals: None of the ingredients are listed.
CERCLA: None of the ingredients are listed.
RCRA: None of the ingredients are listed.
Section 112(r) of the Clean Air Act (CAA): None of the ingredients are listed.
Massachusetts Right to Know: None of the ingredients are listed.
New Jersey Right to Know: None of the ingredients are listed.
New York Right to Know: None of the ingredients are listed.
Pennsylvania Right to Know: None of the ingredients are listed.
California Proposition 65: None of the ingredients are listed.
Additional information: Not determined.

SECTION 16: Other Information

Abbreviations and Acronyms: None
Disclaimer:

This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

NFPA: 0-0-0
HMIS: 0-0-0
Initial Preparation Date: 07.19.2023

End of Safety Data Sheet