ESD Triple Blend Media

Safety Data Sheet

according to the federal final rule of hazard communication revised in 2012 (HazCom 2012)

SECTION 1: Identification of the substance or mixture and of the supplier

1.1. Product identifier

Trade name : ESD Triple Blend Media

Product code : PUR-005

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Dry granular medium for use in gas-phase air filtration

Restrictions of use : Only use for the intended purpose.

: The product is not intended to remove dangerous particulates or biological agents.

: The product is not intended to purify water.

1.3. Details of the supplier of the safety data sheet

Manufacturer : Purafil, Inc.
2654 Weaver Way
Doraville, Georgia 30340 USA
Tel: +1-770-662-8545, +1-800-222-6367 (toll-free within the USA & Canada)
Fax: +1-770-263-6922
www.purafil.com

1.4. Emergency telephone number

CHEMTREC : For Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300 CCN723586
Outside USA and Canada: +1-703-741-5970 (collect calls accepted)

Purafil, Inc. : +1-770-662-8545, +1-800-222-6367 (toll-free within the USA and Canada)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irrit. 2 H315

Eye Irrit. 2A H319

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS-US) : P264 - Wash hands thoroughly after handling
P280 - Wear eye protection, protective clothing, protective gloves
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

2.3. Other hazards

May cause respiratory irritation.

Special danger of slipping by leaking/spilling product.

The components in this mixture do not meet the criteria for classification as PBT or vPvB.

2.4. Unknown acute toxicity (GHS-US)

No data available.

SECTION 3: Composition/information on ingredients

Name	Product identifier	%	GHS-US classification
Carbon	(CAS No) 7440-44-0	38-48	Not classified
Aluminum oxide	(CAS No) 1344-28-1	20 -30	Not classified
Magnesium oxide	(CAS No) 1309-48-4	3 - 8	Not classified
Sodium bicarbonate	(CAS No) 144-55-8	3 - 8	Not classified
Sodium permanganate	(CAS No) 10101-50-5	2 - 4	Ox. Sol. 2, H272 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314
Potassium hydroxide	(CAS No) 1310-58-3	2 - 4	Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 Eye Dam. 1, H318
Dibromothymolsulfonphthalein	(CAS No) 76-59-5	< 1	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

General information : First aider: Pay attention to self-protection!

After inhalation : Provide fresh air. In case of respiratory tract irritation, consult a physician.

After contact with skin : After contact with skin, wash immediately with water and soap. Change contaminated clothing. If the product contacts the skin with water, it may leave a stain of insoluble products on the skin. This stain will be washed away/rubbed off over a period of time (hours to days). If skin irritation or rash occurs: Get medical advice/attention.

After contact with eyes : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophthalmologist.

After ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

: Following inhalation: Coughing, asthmatic complaints. Repeated and prolonged contact may aggravate asthma and dermatitis.
: After skin contact: Irritation and reddening. Skin rashes.
: Following eye contact: Irritation and reddening. Causes serious eye irritation.
: After ingestion: May cause irritation of the gastrointestinal mucosa, abdominal pain, vomiting and diarrhea.

4.3. Indication of any immediate medical attention and special treatment needed

: Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Coordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

: The material is not combustible. When involved in a fire, the sodium permanganate component may release corrosive fumes.
: Contains an oxidizing substance (sodium permanganate). The product is considered to have no oxidizing properties and it should be classified as "not oxidizing" and "Not Division 5.1" following UN Handbook. A test according to UN Handbook 34.4.1 and GHS was performed and confirms this statement.

5.3. Advice for firefighters

: Wear a NIOSH approved self-contained breathing apparatus and chemical protective clothing.

5.4. Additional information

: Suppress gases/vapors/mists with water spray jet.
: Contaminated firefighting water must be collected separately. Do not allow to enter into surface water or drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

: Provide adequate ventilation. Avoid generation of dust. Do not breathe dust. Avoid contact with skin, eyes and clothes. Wear personal protection equipment.

6.2. Environmental precautions

: Do not allow to enter into surface water or drains. If contacted by water, the sodium permanganate may leach out and the water may turn pink to purple in color. Sodium bisulfite will clarify the water, but will give off sulfur dioxide vapors and should only be used in well ventilated areas.

6.3. Methods and material for containment and cleaning up

: Pick up dry. Take up mechanically. Avoid generation of dust. Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

: Protection measures in accordance with section 8.
: Disposal in accordance with section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Avoid generation of dust. Use air conveying (vacuum) for bulk removal. If manual handling is used for transfer (from vessel, slingbags, boxes, or pails), avoid crushing the product to keep dusting to a minimum, use mechanical ventilation or other measures to remove airborne dust.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels : Store only in original container. Keep container tightly closed in a cool, well-ventilated place.
: Protect from water and exposure to contaminated air (gaseous, particulate, and aerosol contaminated), otherwise the product may be rendered useless.

Further information on storage conditions : Recommended packaging materials:
- Corrugated double wall boxes with plastic liners.
- Injection molded polystyrene pails and lids including a neoprene seal.

7.3. Specific end use(s)

: Dry granular medium for use in gas-phase air filtration.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Aluminum oxide (1344-28-1)		
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Potassium hydroxide (1310-58-3)		
ACGIH	ACGIH Ceiling (mg/m³)	2 mg/m³

8.2. Exposure controls

Appropriate engineering controls : If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust.

Protective and hygiene measures : Remove contaminated, saturated clothing immediately. After work, wash hands and face.
: When using, do not eat or drink.

Eye and face protection : Tightly fitting safety glasses with side shields.

Hand protection : Protect skin by using skin protective cream.
: Wear suitable gloves.
Suitable material: NR (natural rubber (India rubber, caoutchouc), natural latex).
Thickness of glove material: >= 0.1 mm
Penetration time (maximum wearing period): >480 Min.
The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Skin protection : Full cover clothing covering arms and legs.

Respiratory protection	:	In exceptional situations (e.g., accidental release of substances, occupational exposure limit is exceeded) the wearing of respiratory protection is required. Observe the wear time limits.
	:	Dust mask: NIOSH N95; identification color: white

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state (appearance)	:	Solid, roughly spherical and extruded pellets or granules, $^{1}/_{16}$ - ¼" (1.6 – 6.4 mm) in diameter
Color	:	Pink to purple (violet) and black
Odor	:	No specific odor
Odor threshold	:	No data available
pH	:	No data provided
Changes in the physical state		
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability		
Solid	:	No data available
Upper/lower flammability	:	No data available
Explosive properties		
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Ignition temperature	:	No data available
Auto-ignition temperature		
Solid	:	No data available
Decomposition temperature	:	No data available
Oxidizing properties	:	The product is considered to have no oxidizing properties and it should be classified as "not oxidizing" and "Not Division 5.1" following UN Handbook. A test according to UN Handbook 34.4.1 and GHS was performed and confirms this statement.
Vapor pressure	:	No data available
Vapor density	:	No data available
Relative density	:	ca. 42.5 lb/ft^3, 0.6810 g/cc, 681 kg/m^3
Water Solubility	:	Partially soluble
Solubility in other solvents	:	No data available
Soluble in	:	Concentrated acids, alkalis
Partition coefficient		
n-octanol/water	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available

9.2. Other information

: No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

: No dangerous reactivity under normal conditions.

10.2. Chemical stability

: The product is stable under regular conditions.

10.3. Possibility of hazardous reactions

: May occur in contact with: acids, strong oxidizing agents.

10.4. Conditions to avoid

: Liquid water, moisture. Heat sources, open flames and other ignition sources.

10.5. Incompatible materials

: Acids, strong oxidizing agents.

10.6. Hazardous decomposition products

: Sodium permanganate may liberate corrosive fumes if involved in a fire. Carbon monoxide and carbon dioxide may be generated during combustion of this material.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Aluminum oxide (1344-28-1)	
LD_{50} oral rat	> 5,000 mg/kg

Carbon (7440-44-0)	
LD_{50} oral rat	> 10,000 mg/kg

Sodium bicarbonate (144-55-8)	
LD_{50} oral rat	4,220 mg/kg
ATE US (oral)	4,220.000 mg/kg bodyweight

Sodium permanganate (10101-50-5)	
ATE US (oral)	500.000 mg/kg bodyweight

Potassium hydroxide (1310-58-3)	
LD_{50} oral rat	284 mg/kg
ATE US (oral)	284.000 mg/kg bodyweight

SECTION 12: Ecological information

12.1. Toxicity

Sodium bicarbonate (144-55-8)	
LC_{50} fish 1	8,250 – 9,000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC_{50} Daphnia 1	2,350 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Sodium permanganate (10101-50-5)	
LC_{50} fish 1	2.97 - 3.11 mg/l (Exposure time: 96 h - Species: Cyprinus carpio)
LC_{50} fish 2	3.16 - 3.77 mg/l (Exposure time: 96 h - Species: Cyprinus carpio)

12.2. Persistence and degradability

: No data available.

12.3. Bioaccumulative potential

: No data available.

12.4. Mobility in soil

: No data available.

12.5. Results of PBT and vPvB assessment

: The components in this mixture do not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

: No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal : Waste disposal should be in accordance with existing federal, state, and local environmental control regulations. Spent media that has removed toxic chemicals should be examined for specific hazards. Spilled product may be recovered for use if it has not come in contact with liquid, changed color, or been exposed to significant amounts of gaseous contaminants.

Disposal of residues/unused products : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to an approved waste disposal plant. Avoid release to the environment.

Disposal of packaging : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to an approved waste disposal plant. Avoid release to the environment.

SECTION 14: Transport information

14.1. Land transport (DOT)

UN number	: None on finished product.
UN proper shipping name	: Not regulated.
Transport hazard classes	: None on finished product.
Packing group	: None on finished product.
Marine pollutant	: No

14.2. Water transport (IMDG / IMO)

UN number	: None on finished product.
UN proper shipping name	: Not regulated.
Transport hazard classes	: None on finished product.
Packing group	: None on finished product.
Marine pollutant	: No

14.3. Air transport (IATA / ICAO)

UN number	: None on finished product.
UN proper shipping name	: Not regulated.
Transport hazard classes	: None on finished product.
Packing group	: None on finished product.
Marine pollutant	: No

14.4. Environmental hazards

Environmentally hazardous : No

14.5. Special precautions for user

: No special precautions known.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Aluminum oxide (1344-28-1)	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 % (fibrous forms)

Potassium hydroxide (1310-58-3)	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1,000 lb

15.2. International regulations

CANADA

Aluminum oxide (1344-28-1)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Carbon (7440-44-0)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Sodium bicarbonate (144-55-8)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Sodium permanganate (10101-50-6)	
Listed on the Canadian DSL (Domestic Sustances List)	
WHMIS Classification	Class C - Oxidizing Material Class E - Corrosive Material

Magnesium oxide (1309-48-4)	
Listed on the Canadian DSL (Domestic Sustances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Potassium hydroxide (1310-58-3)	
Listed on the Canadian DSL (Domestic Sustances List)	
WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class E - Corrosive Material

Dibromothymolsulfonphthalein (76-59-5)	
Listed on the Canadian DSL (Domestic Sustances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

EU-Regulations

Aluminum oxide (1344-28-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Sodium permanganate (10101-50-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Sodium bicarbonate (144-55-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Carbon (7440-44-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Magnesium oxide (1309-48-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Potassium hydroxide (1310-58-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Dibromothymolsulfonphthalein (76-59-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations

Aluminum oxide (1344-28-1)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

Carbon (7440-44-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Sodium bicarbonate (144-55-8)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Sodium permanganate (10101-50-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on Turkish inventory of chemicals

Magnesium oxide (1309-48-4)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

Potassium hydroxide (1310-58-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Poisonous and Deleterious Substances Control Law
Listed on the Canadian IDL (Ingredient Disclosure List)

Dibromothymolsulfonphthalein (76-59-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican national Inventory of Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

SECTION 16: Other information

Abbreviations and acronyms

ACGIH: American Conference of Governmental Industrial Hygienists
ATE: acute toxicity estimate
CAS: Chemical Abstracts Service
CLP: Classification, Labeling, Packaging
DOT: United States Department of Transportation
DNEL: Derived No Effect Level
EC_{50}: median effective concentration for immobilization
ErC_{50}: effective concentration of a substance that causes 50% reduction in growth rate
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Code for Dangerous Goods
IMO: International Maritime Organization
LC_{50}: Lethal concentration, 50% of test population
OECD: Organization for Economic Co-operation and Development
LD_{50}: Lethal dose, 50% of test population
PNEC: Predicted No Effect Concentration
STOT: Specific Target Organ Toxicity
TLV: Threshold Limiting Value
TWA-TLV: Threshold Limit Value for the Time Weighted Average 8 hour day (ACGIH Standard)

Full text of H-statements:

Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Ox. Sol. 2	Oxidising Solids, Category 2
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Corr. 1B	Skin corrosion/irritation Category 1B
Skin Irrit. 2	Skin corrosion/irritation Category 2
H272	May intensify fire; oxidiser
H301	Toxic if swallowed
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation