



# MAR SYSTEMS MATERIAL SAFETY DATA SHEET

## SECTION I - IDENTIFICATION

PRODUCT IDENTIFIER <b>SORBSTER Hg MEDIA</b>	ISSUE DATE/ REVISION DATE <b>3/21/2011</b>
SUPPLIER <b>MAR SYSTEMS INC.</b>	EMERGENCY PHONE NUMBER <b>(440) 505-0962</b>
ADDRESS <b>30625 SOLON ROAD, UNIT G CLEVELAND, OH 44139 USA</b>	INFORMATION PHONE NUMBER <b>(440) 505-0962</b>
TDG - ROAD/RAIL (CANADA) <b>NOT CONTROLLED FOR TRANSPORTATION UNDER TDG</b>	ADDITIONAL HAZARD CLASSES <b>NONE</b>
PRODUCT USE <b>Water Purification.</b>	OTHER

## SECTION II - HAZARDOUS INGREDIENTS

CAS NUMBER	RTECS #	% WT	CHEMICAL NAMES	OSHA PEL TOTAL mg/m <sup>3</sup>	ACGIH TLV TOTAL mg/m <sup>3</sup>	LD <sub>50</sub> mg/kg	LC <sub>50</sub>
1344-28-1	BD1200000	68-90	Aluminum Oxide	5 (respirable)	10	*3,600	N.D.
60676-86-0	VV7328000	0.01-0.2	Silicon Dioxide	10	10	N.D.	N.D.
1309-37-1	NO7400000	0-30	Iron Oxide	15 (Total Dust)	1 (Fe)	N.D.	N.D.
10028-22-5	NO8505000	1-20	Ferric Sulfate	15 (Total Dust)	1 (Fe)	‡168	N.D.
1317-37-9	N.D.	1-20	Iron Sulfide	15 (Total Dust)	1 (Fe)	N.D.	N.D.

\* AL<sub>2</sub>O<sub>3</sub>; LD<sub>50</sub> (Intraperitoneal - mouse) VCVN1\* "Vrednie chemicheskie veshstva. Neorganicheskie soedinenia elementov I-IV groopp" (Hazardous substances. Inorganic substances containing I-IV group elements), Filov V.A., Chimia, 1988. Volume (issue)/page/year: -,212,1988.

‡Fe<sub>2</sub>O<sub>3</sub>; LD<sub>50</sub> (Intraperitoneal - mouse) COREAF Comptes Rendus Hebdomadaires des Seances, Academie des Sciences. (Paris, France) V.1-261, 1835-1965.

(N.A.= not applicable; N.E.= not evaluated; N.D.= not determined)

## SECTION III - PHYSICAL DATA

PHYSICAL STATE <b>Free-flowing granules/powder</b>	SPECIFIC GRAVITY <b>3.0-4.0</b>	APPARENT BULK DENSITY <b>45-58 lbs./ft<sup>3</sup></b>	BOILING POINT <b>~2977 °C</b>
APPEARANCE AND ODOR <b>Gray to brown spheres, granules or powder, sulfur odor</b>		SOLUBILITY IN WATER <b>Nil</b>	MELTING POINT <b>~2050 °C</b>

## SECTION IV - FIRE AND EXPLOSION DATA

FLAMMABILITY <b>YES X NO</b>	IF YES, UNDER WHICH CONDITIONS? <b>NOT APPLICABLE</b>			
MEANS OF EXTINCTION <b>Use extinguishing agent suitable for surrounding fire. Exposed firefighters must wear MSHA/NIOSH approved positive pressure self-contained breathing apparatus with full face mask and protective clothing.</b>				
FLASH POINT <b>NOT APPLICABLE</b>	METHOD USED <b>NOT APPLICABLE</b>	AUTOIGNITION TEMP. <b>NOT APPLICABLE</b>	LEL <b>NOT APPLICABLE</b>	UEL <b>NOT APPLICABLE</b>
EXPLOSION DATA <b>Dust may form explosive mixtures in air. Fire may produce poisonous or irritating gas, fumes or vapors. Irritating or toxic substances may be emitted upon thermal decomposition. Not sensitive to impact or static discharge.</b>				

## SECTION V - REACTIVITY DATA

STABLE <b>X</b>	UNSTABLE	IF UNSTABLE, UNDER WHICH CONDITIONS? <b>Avoid contamination. Contact with water will generate immediate temperature rise that dissipates quickly.</b>
INCOMPATIBILITY WITH OTHER SUBSTANCES <b>None expected.</b>		
REACTIVITY, AND UNDER WHAT CONDITIONS <b>Substantially inert. May react with strong acids and bases.</b>		
HAZARDOUS DECOMPOSITION PRODUCTS <b>Thermal decomposition products may include oxides of sulfur.</b>		

## SECTION VI - TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY (CHECK ALL THAT APPLY)			
	<input checked="" type="checkbox"/> SKIN CONTACT	<input type="checkbox"/> SKIN ABSORPTION	<input checked="" type="checkbox"/> EYE CONTACT <input checked="" type="checkbox"/> INHALATION <input checked="" type="checkbox"/> INGESTION
<b>Effects of Acute Exposure to Product</b>	<p><b>Skin</b>    Dusts may be slightly to moderately irritating. Contact may cause reddening, itching and inflammation. Prolonged or repeated contact may cause dermatitis and allergic sensitization.</p> <p><b>Eye</b>    Direct eye contact may cause irritation, redness and pain. May also cause abrasion of the ocular surface. May cause discoloration of the eyelid and conjunctivae. Repeated or prolonged contact may cause conjunctivitis.</p> <p><b>Ingestion</b>    May cause gastrointestinal disturbances. Symptoms may include irritation nausea, vomiting and diarrhea.</p> <p><b>Inhalation</b>    May cause respiratory tract irritation, coughing, and difficulty in breathing and pulmonary edema. May cause an excess risk of asthmatic attacks in susceptible individuals. Fumes from heated material may cause metal fume fever, characterized by sweet or metallic taste in the mouth accompanied by dryness and irritation of the throat, cough, shortness of breath, general malaise, weakness, fatigue, muscle and joint pains, blurred vision, fever and chills. Repeated or prolonged breathing of particles of respirable size may cause inflammation of the lung leading to chest pain, difficulty breathing, coughing and possible fibrotic change in the lung - "pneumoconiosis".</p>		
<p><b>Effects of Chronic Exposure to Product</b>                      Elevated concentrations of aluminum have been found in brain tissue of patients with Alzheimer's Disease. It is still unclear whether aluminum is the cause or merely a marker of some other disease process.                      This product may contain Silicon Dioxide. IARC has determined that there is inadequate evidence for the carcinogenicity of Silicon Dioxide in humans and experimental animals. (IARC Class 3)                      This product may contain Iron Oxide. IARC has determined that there is inadequate evidence for the carcinogenicity of Iron Oxide in humans. IARC has determined that there is animal evidence suggesting a lack of carcinogenicity. (IARC Class 3)</p>			
<b>EXPOSURE LIMITS</b> See Section II for exposure limits	<b>IRRITANCY OF PRODUCT</b> Potential eye, skin, & respiratory irritant.	<b>SENSITIZATION TO PRODUCT</b> Metals may cause allergic effects in some individuals	<b>CARCINOGENICITY</b> See above
<b>TERATOGENICITY</b> Not available	<b>REPRODUCTIVE TOXICITY</b> Not available	<b>MUTAGENICITY</b> Not available	<b>SYNERGISTIC PRODUCTS</b> Not available

## SECTION VII - PREVENTIVE MEASURES

<b>PERSONAL PROTECTIVE EQUIPMENT</b>		
<b>GLOVES (SPECIFY)</b> Wear gloves found to be impervious under conditions of use.	<b>RESPIRATOR (SPECIFY)</b> NIOSH approved respirator with HEPA filter if Section II TLV's are to be exceeded.	<b>EYE PROTECTION (SPECIFY)</b> Wear safety glasses or dust proof chemical goggles if airborne concentrations are high.
<b>FOOTWEAR (SPECIFY)</b> Wear boots found to be impervious under conditions of use.	<b>CLOTHING (SPECIFY)</b> Dust proof coveralls should be worn in areas where high dust concentrations exist.	<b>OTHER</b> An eyewash station and safety deluge shower should be located in the work area.
<b>ENGINEERING CONTROLS</b> Ventilation and other forms of engineering controls are often the preferred means for controlling chemical exposures.		
<b>LEAK AND SPILL PROCEDURE</b> No special procedures are required for cleanup of spill or leaks of this material. Avoid methods that result in water pollution. Caution should be exercised regarding personnel safety and exposure to the spilled material, as indicated elsewhere in this data sheet. During an accidental release, personal protective equipment may be required (see above).		
<b>WASTE DISPOSAL</b> Collect for disposal. Treatment storage transportation and disposal must be in accordance with local, state/provincial and federal regulation. Dispose of in an approved and permitted landfill. Reuse and recycling options should be explored before disposal. Contact Mars Systems for more information.		
<b>HANDLING PROCEDURES AND EQUIPMENT, STORAGE REQUIREMENTS</b> Minimize the raising of dust during handling and contact. Do not enter confined vapor spaces without proper protective equipment. Accidental ingestion of this material should be avoided. Hands and face should be washed with soap and water prior to eating, drinking, smoking and application of cosmetics, and these activities should be prohibited in areas where this product is used. Do not wear contact lenses while working with this material. Contaminated work clothes should not be brought home. Store in a well ventilated, dry area away from sources of ignition and incompatibles. Product should not get wet during storage as an immediate rise in temperature will occur as water saturates the product. This temperature rise dissipates with time. Area should be secured to prevent unauthorized access to catalyst type products.		

## SECTION VIII - FIRST AID MEASURES

<p><b>SKIN:</b> Remove contaminated clothing immediately. Wash area of contact thoroughly with soap and water. Get medical attention if irritation persists.</p> <p><b>EYE:</b> Flush immediately with large amounts of temperate potable water for at least fifteen minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.</p> <p><b>INHALATION:</b> Remove affected person from source of exposure. If not breathing, ensure airway is not obstructed and administer mouth-to-mouth resuscitation and/or CPR as appropriate. If breathing is difficult, administer oxygen if available. After administration of oxygen, continue to monitor closely. Keep affected person warm and at rest. Get medical attention immediately.</p> <p><b>INGESTION:</b> If victim is conscious, give one to three glasses of water or milk to dilute stomach contents. Keep affected person warm and at rest. Get immediate medical attention.</p>		
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