

SECTION I - IDENTIFICATION

EQUILIBRIUM CATALYST (SPENT FLUID CRACKING CATALYST)	REVISION DATE
SUPPLIER	JANUARY 30, 2001
METALLOY, INC. "THE EQUILIBRIUM CATALYST PEOPLE"	EMERGENCY PHONE NUMBER
ADDRESS	(440) 473-0535
6563 WILSON MILLS ROAD #103, CLEVELAND, OH 44143-3409 USA	INFORMATION PHONE NUMBER
HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101)	(440) 473-0535
NOT REGULATED FOR TRANSPORTATION	ADDITIONAL HAZARD CLASSES
CHEMICAL FAMILY & SYNONYMS	NONE
ALUMINUM OXIDE/SILICA OXIDE	

SECTION II - HAZARDOUS INGREDIENTS

CAS REGISTRY NUMBER	RTECS REGISTRY NUMBER	% WT	CHEMICAL NAMES	OSHA PEL TOTAL mg/m ³	ACGIH TLV TOTAL mg/m ³	OTHER LIMITS Respirable mg/m ³	Listed as carcinogen NTP, IARC, or OSHA 1910 (z) (specify)
7631-86-9	N.E.	25-80	Silica (Synthetic SiO ₂)	6	10	N.E.	No
1344-28-1	BD1200000	20-75	Alumina (Al ₂ O ₃)	10	10	5(OSHA)	No
112926-00-8	N.E.	20-75	Silica Gel	6	10	N.E.	No
1332-58-7	GF1670500	20-75	Kaolin	10	2(respirable)	N.E.	No
60676-86-0	VV7328000	1.0 (max)	Quartz	0.1	0.1(respirable)	N.E.	IARC (2B), NTP
Not Listed	N.E.	0.1-2.5	Sulfate	N.E.	N.E.	0.1(ACGIH)	No
68188-83-0	N.E.	0.1-10	Rare Earths (RE ₂ O ₃)	N.E.	N.E.	N.E.	Yes
13463-67-7	XR2275000	0.1-3.0	Titanium Dioxide (TiO ₂)	N.E.	10	N.E.	No
1313-59-3	N.E.	0.2-1.5	Sodium Oxide (Na ₂ O)	N.E.	N.E.	N.E.	No
7440-44-0	FF5250100	0-2.0	Coke	N.E.	N.E.	N.E.	No
7439-89-6	NO4565500	0.2-2.0	Iron	N.E.	N.E.	N.E.	No
7440-36-0	CC4025000	0-2500 PPM	Antimony	0.5	0.5	N.E.	IARC (2B), NTP
7440-50-8	GL5325000	5-1000 PPM	Copper	1(dust & mist)	1(dust & mist)	N.E.	No
7440-02-0	QR5950000	45-7000 PPM	Nickel	0.1(soluble cpds)	0.1(soluble cpds)	N.E.	IARC (2B), NTP
7440-62-2	N.E.	45-7000 PPM	Vanadium	0.05 (dust)	0.05 (dust)	N.E.	No
7439-92-1	OF7525000	200 PPM	Lead	50 µg/m ³	0.15	N.E.	IARC, NTP, OSHA

Components marked with an "" are reportable under SARA Title III Section 313 (40CFR part 372). California Proposition 65 status: This product contains ingredients known to the State of California to cause cancer, birth defects or other reproductive harm. EPA has defined zeolites as statutory mixtures consisting of silica and alumina in various proportions plus metallic oxides and certain cations.

SECTION III - PHYSICAL DATA

SPECIFIC GRAVITY	pH	BULK DENSITY	BOILING POINT
@ 2.1	3-6 (5% slurry)	0.7-1.1 g/cm ³	N.E.
APPEARANCE AND ODOR	SOLUBILITY IN WATER		MELTING POINT
Off white to gray fine odorless powder.	Nil - Heavy metals may leach off in water.		2072 °C (Al ₂ O ₃)

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT	METHOD USED	FLAMMABLE LIMITS	LEL	UEL
NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE
BASIC FIRE FIGHTING PROCEDURES				
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. Use water spray to cool fire-exposed containers.				
UNUSUAL FIRE AND EXPLOSION HAZARDS				
Combustible at high temperatures. Fire may produce poisonous or irritating gas, fumes or vapors. Irritating or toxic substances may be emitted upon thermal decomposition.				

SECTION V - REACTIVITY DATA

STABLE	UNSTABLE	CONDITIONS TO AVOID
X		Avoid contamination and wetting of catalyst. Avoid elevated temperatures. Avoid contact with strong oxidizers.
INCOMPATIBILITY		
Incompatible with strong mineral acids, Chlorine Trifluoride, and other halogenated compounds. Thermal decomposition products may include carbon monoxide, carbon dioxide, oxides of sulfur, nickel subsulfide and nickel carbonyl.		

SECTION VI - SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES
Where possible use vacuum suction for cleanup. Use dust suppressant when sweeping is necessary. 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 Section VIII below). CERCLA reportable quantity should be calculated based on product analysis.
DISPOSAL OF SPILLED MATERIALS
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. Catalyst is considered a hazardous waste in some states.

SECTION VII - HEALTH HAZARD DATA

Material Safety Data Sheet

HEALTH HAZARDS - ACUTE (PRIMARY ROUTES OF ENTRY: INHALATION, INGESTION, SKIN CONTACT AND EYE CONTACT)
SKIN: Dusts may be slightly to moderately irritating. Contact may cause reddening, itching and inflammation. Prolonged or repeated contact may cause dermatitis and allergic sensitization. Antimony compounds can produce a rash consisting of pimples.
EYE: Direct 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.
INGESTION: May cause liver damage & gastrointestinal disturbances. Symptoms include irritation, nausea, vomiting and diarrhea.
INHALATION: May cause respiratory tract irritation, pneumonitis 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, nose bleeds, bloody diarrhea, 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". May cause "Siderosis" - inflammation of the lungs, chest pain, difficult breathing and coughing. Nickel metal is a pulmonary sensitizer. Overexposure to Vanadium may cause greenish discoloration of the tongue and possible allergic reaction.
HEALTH HAZARDS - CHRONIC
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.
Quartz is listed by IARC as a Class 2A carcinogen. NTP, IARC and OSHA have determined that lead is a confirmed human carcinogen. IARC has determined that there is sufficient evidence for the carcinogenicity of nickel and nickel compounds in humans. NTP has classified nickel and nickel compounds as substances that may reasonably be anticipated to be carcinogens. Animal testing indicates that nickel and nickel compounds may cause reproductive effects.
This product may contain Titanium Dioxide. IARC has determined that there is inadequate evidence for the carcinogenicity of Titanium Dioxide in humans. IARC has determined that there is limited evidence for the carcinogenicity of Titanium Dioxide in experimental animals. (IARC Class 3)
There is suggestive evidence that Yttrium compounds exert some carcinogenic activity based on oral test with laboratory animals. In animal studies Yttrium compounds have produced decreased body weights, pneumoconiosis, emphysema and enlarged lymph nodes
Antimony Trioxide has caused changes in the lungs and liver of Guinea Pigs. Antimony Trisulfide has produced changes in the heart in man and animals.
EMERGENCY AND FIRST AID PROCEDURES
SKIN: Remove contaminated clothing immediately. Wash area of contact thoroughly with soap and water. Get medical attention if irritation persists.
EYE: 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.
INHALATION: 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.
INGESTION: 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.
NOTES TO PHYSICIAN
Persons with asthmatic-type conditions, chronic bronchitis, other respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with this material. It is conceivable that trace metals could induce symptoms of dermal sensitivity.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Persons with preexisting cardiovascular, skin or respiratory conditions, including asthma, may be at an increased risk from exposure.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION
If exposure limits are to be exceeded or if irritation is experienced, NIOSH approved respiratory protection should be worn. NIOSH approved respirator for particulates with a TLV of less than 0.05 mg/m ³ is generally acceptable. In areas where oxygen content is less than 19.5% or where airborne concentrations of dust are high, NIOSH approved supplied air respirator should be worn. Ventilation and other forms of engineering controls are often the preferred means for controlling chemical exposures. Respiratory protection may be needed for non-routine emergency situations.
EYE/SKIN PROTECTION
Avoid eye contact with this material. Wear safety glasses or dust proof chemical goggles if airborne concentrations are high. Provide an eyewash station immediately accessible to the work area. Do not wear contact lenses when working with this material. Prevent skin contact. Wear gloves found to be impervious under conditions of use. Additional protection may be necessary to prevent skin contact including apron, arm covers, face shield, boots or full body protection. A safety deluge shower should be located in the work area.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Flammable, toxic and/or corrosive gases may be found in confined vapor spaces. Do not enter confined vapor spaces without proper protective equipment. Water contamination 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. Contaminated work clothes should not be brought home. Empty containers may contain toxic, flammable or explosive vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Store in a well ventilated area away from sources of ignition and incompatibles. Area should be secured to prevent unauthorized access to catalyst.

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