

**USS MINNTAC PLANT  
MATERIAL SAFETY DATA SHEET  
Minntac MSDS C-249**

Health	1*
Flammability	0
Reactivity	0
Personal Protection	-

1	Health
0	Flammability
0	Reactivity
-	Specific Hazard

HMIS Ratings  
\*See Section VIII

NFPA Ratings  
NFPA 30B Rating: 1

**SECTION I**

PRODUCT NAME IRON ORE CONCENTRATES, AND FILTER CAKES	INFORMATION TELEPHONE NO. (218) 749-7401
SUPPLIER USS MINNTAC PLANT	24 HR. EMERGENCY TELEPHONE NO. (218) 749-7406
ADDRESS P.O. BOX 417, MT. IRON, MN 55768	DATE 02-18-2003
HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (42 CFR 172.101) IRON ORE CONCENTRATES, AND FILTER CAKES	
ADDITIONAL HAZARD CLASSES (as applicable) NONE	
CHEMICAL FAMILY IRON ORE	FORMULA MIXTURE

**SECTION II – HAZARDOUS INGREDIENTS**

CAS REGISTRY NUMBER	%	CHEMICAL NAME(S)	OSHA PEL	MSHA TLV	Listed as Carcinogen NTP, IARC or OSHA 1910(z)(specify)
1309-37-1	62-69	IRON	10 mg/M <sup>3</sup> AS Iron Oxide dust and fume	10mg/M <sup>3</sup> as the fume	
14808-60-7	3-6	SILICA (quartz)	10(%Silica +2) as Total Respirable Dust	10(%Silica +2) as Total Respirable Dust	IARC
1305-78-8	0-5	CALCIUM OXIDE	5 mg/M <sup>3</sup>	5 mg/M <sup>3</sup>	
1309-48-4	0-2	MAGNESIUM OXIDE	15mg/M <sup>3</sup> as total particulates	10 mg/M <sup>3</sup> as the fume	

NOTE: All commercial metals contain small amounts of various elements in addition to those specified. These small quantities, frequently referred to as “trace” or “residual” elements, generally originate in the raw materials used. Typical levels of commonly involved trace or residual elements that may be encountered in steel products are provided in Annex I so that their potential hazards may be considered.

NOTE: All exposure limits are based on 8-hour time-weighted average values.  
 \*(C) denotes “Ceiling limit” which should not be exceeded at any time.  
 \*\* (STEL) denotes “Short Term Exposure Limit” – a 15 minute time weighted average value.  
 \*\*\* PNOR - Particulates Not Otherwise Regulated  
 E denotes Environmental Hazard (PA)

**SECTION III – PHYSICAL DATA**

BOILING POINT (Degree) N.A. F C	SPECIFIC GRAVITY	N.E.	MAXIMUM PERCENT VOC BY WEIGHT (%) % Q Method used THEORETICAL
VAPOR PRESSURE N.A. F C mm H psi	PERCENT VOLATILE BY VOLUME (%)	0	
VAPOR DENSITY (AIR = 1) N.A.	EVAPORATION RATE (Butyl Acetate = 1)	N.E.	
SOLUBILITY IN WATER N.A.	PH =	N.E.	PERCENT SOLID BY WEIGHT (%) 100%
APPEARANCE AND ODOR DARK RED TO BLACK, SOLID			

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT N.A. F C method used	FLAMMABLE LIMITS	LEL N.A.	UEL N.A.
EXTINGUISHING MEDIA N.A.			
SPECIAL FIRE FIGHTING PROCEDURES N.A.			
UNUSUAL FIRE AND EXPLOSION HAZARDS NONE			
WARNING NONE			

N.A. – Not Applicable  
 N.E. – Not Established  
 N.D. – Not Determined

**SECTION V – HEALTH HAZARD DATA**

<b>HEALTH HAZARDS (ACUTE AND CHRONIC – INCLUDE TARGET ORGAN EFFECTS)</b> Respiratory exposure to crystalline silica can cause lesions in the respiratory bronchioles in early stages to later development of massive fibrosis. This is usually developed over an extended period of time in a gradual progression; however, progression of symptoms usually continues after dust exposure ceases. Long-term inhalation of Iron Oxide dust may produce a benign pneumoconiosis (siderosis).			
<b>SIGNS AND SYMPTOMS OF OVEREXPOSURE</b> Cough, dyspnea, wheezing, and repeated non-specific chest illness.			
<b>PRIMARY ROUTES OF ENTRY</b>	Inhalation YES	Eye Contact YES	Other(specify)
<b>EMERGENCY AND FIRST AID PROCEDURES</b> Inhalation: Remove to fresh air. Administer oxygen. Seek medical attention. Eye Contact: Flush eyes thoroughly with running water, including under the eyelids for at least 15 minutes. Seek medical attention.			
<b>MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE</b> IARC has listed crystalline silica as a Group 1 known Human Carcinogen			

**SECTION VI – REACTIVITY DATA**

<b>STABILITY</b>	UNSTABLE		CONDITIONS TO AVOID NONE
	STABLE	X	
<b>INCOMPATIBILITY (materials to avoid)</b> NONE			
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b> Steel products under normal conditions do not present an inhalation, ingestion, contact health or environmental hazard. However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc., which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, may present health hazards.			
<b>HAZARDOUS POLYMERIZATION</b>	MAY OCCUR		CONDITIONS TO AVOID NONE
	WILL NOT OCCUR	X	

**SECTION VII – SPILL OR LEAK PROCEDURES**

<b>STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED</b> Clean-up personnel should be protected against eye contact and inhalation of dust. Provide mechanical ventilation, and avoid raising dust clouds. Place in closed container for disposal.			
<b>WASTE DISPOSAL METHOD</b> DISPOSE OF IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS			
<b>CERCLA (Superfund) REPORTABLE QUANTITY (In lbs.)</b> N.A.			
<b>RCRA HAZARDOUS WASTE NO (40 CFR 261.33)</b> N.A.			

**SECTION VIII – SPECIAL PROTECTION INFORMATION**

<b>RESPIRATORY PROTECTION (specify type)</b> NIOSH approved particulate respirators. Appropriate respirator selection depends upon type and magnitude of exposure.			
<b>VENTILATION</b> Mechanical general and/or local exhaust ventilation.			<b>SPECIAL</b> NONE
<b>SPECIAL PROTECTION INFORMATION</b> Protective clothing and work gloves		<b>EYE PROTECTION (specify type)</b> Safety glasses with side shields.	
<b>OTHER PROTECTIVE EQUIPMENT</b> None		<b>WORK/HYGIENIC PRACTICES</b> Particulates to minimize dust generation.	

**SECTION IX – SPECIAL PRECAUTIONS**

<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING</b> Good housekeeping techniques such as vacuuming should be used to remove dust accumulations and to prevent the generation of airborne dust. Avoid the use of compressed air for removing settled dust; avoid inhalation of dust and contact with eyes.			
<b>OTHER PRECAUTIONS</b> NONE			

N.A. – Not Applicable  
N.E. – Not Established  
N.D. – Not Determined