United States Steel Corporation

Minntac Standard Pellets

Safety Data Sheet (SDS)

USS IHS Number: 75053

(Replaces USS Code Number IHS 5782)

Locations: Minntac

Original: 12/16/2010 **Revision: 12/31/2020**

Section 1 – Identification

1(a) Product Identifier Used on Label: Minntac Standard Pellets

1(b) Other Means of Identification: Iron Ore Pellets

1(c) Recommended Use of the Chemical and Restrictions on Use: Blast Furnace Feed, No restrictions

1(d) Name, Address, and Telephone Number:

United States Steel Corporation
600 Grant Street, Room 1662
Pittsburgh, PA 15219-2800

Phone number: (412) 433-6840 (8:00 am to 5:00 pm)
FAX: (412) 433-5019

1(e) Emergency Phone Number: 1-800-262-8200 (CHEMTREC)

Section 2 – Hazard(s) Identification

2(a) Classification of the chemical: Minntac Standard Pellets is **not considered** hazardous under Reach regulation (REACH REGULATION (EC) No 1907/2006) and is not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008). However, **Minntac Standard Pellets is hazardous** under OSHA's Hazard Communication Standard (29 CFR 1910.1200). Therefore, the categories of Health Hazards as defined in "GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3" United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2(b) Signal Word, Hazard Statement(s), Symbols and Precautionary Statement(s):

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement(s)
	Carcinogenicity -1A Single Target Organ Toxicity (STOT) Single Exposure - 2	**WARNING**	May cause cancer. Causes mechanical irritation to skin and lung irritation.

Precautionary Statement(s):

Prevention	Response	Storage/Disposal
Do not breathe dusts or fume. Wear protective gloves / protective clothing / eye protection / face protection. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.	If exposed or concerned: Get medical advice/attention, call a poison center or doctor.	Dispose of contents in accordance with federal, state and local regulations. Store locked up.

2(c) Hazards Not Otherwise Classified: None Known

2(d) Unknown Acute Toxicity Statement (mixture): None Known

Section 3 – Composition/Information on Ingredients

3(a-c) Chemical Name, Common Name (Synonyms), CAS Number and Other Identifiers, and Concentration:

Chemical Name	CAS Number	EC Number	% weight
Iron Ore Pellets	65996-65-8	265-996-3	100%

Section 3 – Composition/Information on Ingredients (continued)

3(a-c) Chemical Name, Common Name (Synonyms), CAS Number and Other Identifiers, and Concentration (continued):

Chemical Name	CAS Number	EC Number	% weight
This product is a complex mixture of iron oxides, metallic silicates (including calcium silicate ($CaSiO_3$) 13983-17-0, and magnesium silicate ($MgSiO_3$) 63210-56-0), crystalline and fused silica. Listed below is a partial listing of the components that comprise this product:			
Iron Oxides	1309-37-1 1309-38-2	215-168-2 215-169-8	78-90
Metallic Silicates	Varies	Varies	0.9-2.9
Silica, Fused	60676-86-0	262-373-8	2.2-4.4
Crystalline Silica (as Cristobalite)	14464-46-1	238-455-4	0-2

EC- European Community
CAS- Chemical Abstract Service

Section 4 – First-aid Measures

4(a) Description of Necessary Measures:

- **Inhalation:** If exposed or concerned: Get medical advice/attention, call a poison center or doctor.
- **Eye Contact:** If exposed or concerned: Get medical advice/attention, call a poison center or doctor.
- **Skin Contact:** If exposed or concerned: Get medical advice/attention, call a poison center or doctor.
- **Ingestion:** If exposed or concerned: Get medical advice/attention, call a poison center or doctor.

4(b) Most Important Symptoms/Effects, Acute and Delayed (Chronic):

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations of dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract.
- **Eye:** Particles of iron or iron compounds may become imbedded in the eye. Excessive exposure to high concentrations of dust may cause irritation to the eyes.
- **Skin:** Skin contact with dusts may cause irritation, possibly leading to dermatitis. Skin contact with dusts may cause physical abrasion.
- **Ingestion:** Ingestion of dust may cause nausea and/or vomiting.

Chronic Effects:

Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure. Persons with pre-existing skin disorders may be more susceptible to dermatitis.

4(c) Immediate Medical Attention and Special Treatment: Treat symptomatically.

Section 5 – Fire-fighting Measures

5(a) Suitable (and unsuitable) Extinguishing Media: Use extinguishers appropriate for surrounding materials.

5(b) Specific Hazards Arising from the Chemical: Not applicable for solid product. Avoid breathing dust.

5(c) Special Protective Equipment and Precautions for Fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: If material is in a dry state, avoid inhalation of dust. Personnel should be protected against contact with eyes and skin. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid using compressed air. Do not release into sewers or waterways. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations.

6(b) Methods and Materials for Containment and Clean Up: Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Section 7 - Handling and Storage

7(a) Precautions for Safe Handling: Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Do not breathe dusts or fumes. Wear protective gloves / protective clothing / eye protection / face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid direct contact on skin, eyes or on clothing. Emergency safety showers and eye wash stations should be present.

7(b) Conditions for Safe Storage, including any Incompatibilities: Whenever feasible, store locked up.

Section 8 - Exposure Controls / Personal Protection

8(a) Occupational Exposure Limits (OELs): The following exposure limits is offered as reference, for an experience industrial hygienist to review.

Ingredients	OSHA PEL [1]	ACGIH TLV [2]	NIOSH REL [3]	IDLH [4]
Iron Oxides	10 mg/m³ (iron oxide fume)	5.0 mg/m³ (iron oxide, respirable fraction[5])	5.0 mg/m³ (iron oxide dust and fume)	2,500 mg/m³ (as Fe)
Metallic silicates*	NE	NE	NE	NE
Silica, Fused	80 mg/m³ / % SiO_2 (as SiO_2)	NE	NE	NE
Crystalline Silica (as Cristobalite)	0.05 mg/m³ "AL" 0.025 mg/m³	0.025 mg/m³ (as respirable fraction)	0.05 mg/m³ (as respirable dust), Ca	50 mg/m³ (as quartz, Tripoli) 25 mg/m³ (as cristobalite, tridymite), Ca

NE - None Established

* Varying metallic silicates may be present in varying forms.

1. OSHA PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday. An Action level (AL) is used by OSHA and NIOSH to express a health or physical hazard. They indicate the level of a harmful or toxic substance/activity, which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring. Action Levels are generally set at one half of the PEL but the actual level may vary from standard to standard. The intent is to identify a level at which the vast majority of randomly sampled exposures will be below the PEL.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. ACGIH TLVs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes. DSEN – May cause dermal sensitization. This notation is used to indicate the potential for dermal sensitization resulting from the interaction of an absorbed agent and ultraviolet light (i.e. photosensitization). RSEN – May cause respiratory sensitization.
3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL)- Compendium of Policy and Statements. NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994. Ca is designated as carcinogen.
5. Respirable fraction. The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in ACGIH 2020 TLVs ® and BEIs ® Appendix D, paragraph C.

8(b) Appropriate Engineering Controls: Local exhaust ventilation should be used to control the emission of air contaminants. General dilution ventilation may assist with the reduction of air contaminant concentrations. Emergency eye wash stations and deluge safety showers should be available in the work area.

8(c) Individual Protection Measures:

- **Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (Immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

  Warning! Air-purifying respirators both negative-pressure and powered-air do not protect workers in oxygen-deficient atmospheres.
- **Eyes**: Wear appropriate eye protection to prevent eye contact. Use safety glasses with side shields or chemical goggles.
- **Skin**: Persons handling this product should wear appropriate clothing to prevent skin contact. Wear protective gloves.
- **Other Protective Equipment**: An eyewash fountain and deluge shower should be readily available in the work area.

Section 9 - Physical and Chemical Properties

9(a) Appearance (physical state, color, etc.): Dark red to black solid

9(b) Odor: NA

9(c) Odor Threshold: NA

9(d) pH: NA

9(e) Melting Point/Freezing Point: – 2489ºF, -1365ºC (iron oxide)

9(f) Initial Boiling Point and Boiling Range: NA

9(g) Flash Point: NA

9(h) Evaporation Rate: NA

9(i) Flammability (solid, gas): Not flammable

9(j) Upper/lower Flammability or Explosive Limits: NA

9(k) Vapor Pressure: NA

9(l) Vapor Density (Air = 1): NA

9(m) Relative Density: NA

9(n) Solubility(ies): ND

9(o) Partition Coefficient n-octanol/water: NA

9(p) Auto-ignition Temperature: ND

9(q) Decomposition Temperature: ND

9(r) Viscosity: ND

NA - Not Applicable

ND - Not Determined for product as a whole

Section 10 - Stability and Reactivity

10(a) Reactivity: Not Determined (ND)

10(b) Chemical Stability: **Minntac Standard Pellets** are stable under normal storage and handling conditions.

10(c) Possibility of Hazardous Reaction: None Known

10(d) Conditions to Avoid: Storage with strong acids or calcium hypochlorite.

10(e) Incompatible Materials: Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

10(f) Hazardous Decomposition Products: Toxic fumes and vapors may be released at elevated temperatures.

Section 11 - Toxicological Information

11(a-e) Information on Toxicological Effects: The following toxicity data has been determined for **Minntac Standard Pellets** by using the information available for its components applied to the guidance on the preparation of an SDS under the GHS requirements of OSHA and the EU CPL:

Hazard Classification	Hazard Category		Hazard Symbols	Signal Word	Hazard Statement
	EU	OSHA			
Carcinogenicity (covers Categories 1A, 1B and 2)	1A	1A[g]		**Danger**	May cause cancer.
Specific Target Organ Toxicity (STOT) Following Single Exposure (covers Categories 1-3)	2	2[i]		**Warning**	Causes mechanical irritation to skin and lung irritation.

* NR Not Rated - Available data does not meet criteria for classification.

The Toxicological data listed below are presented regardless to classification criteria. Individual hazard classification categories where the toxicological information has met or exceeded a classification criteria threshold are listed above.

a. The following LC_{50} or LD_{50} has been established for **Minntac Standard Pellets** and it's components:
- **Iron Ore Pellets:** Rat LD_{50} > 4500 mg/kg
- **Iron Oxide:** LD_{50}= >10,000 mg/kg (Oral/ Rat)
- **Silica:** LD_{50} = 500 mg/kg (Oral/ Rat)

b. The following Skin (Dermal) Irritation data available for **Minntac Standard Pellets** as a mixture and it's components:
- **Iron Ore Pellets:** Rabbit Not Irritating
- **Iron Oxide:** Moderately irritating

c. The following Eye Irritation data available for **Minntac Standard Pellets** as a mixture and it's components:
- **Iron Ore Pellets:** Rabbit Not Irritating
- **Iron Oxide:** Severely irritating; may cause burns.
- **Silicon Dioxide:** Crystalline silica may cause abrasion of the cornea**.**
- **Magnesium Silicate:** Expected to be a minimal eye irritant.

d. No Skin (Dermal)/Respiratory Sensitization data available for **Minntac Standard Pellets** as a mixture or its individual components.

e. No Aspiration Hazard data available for **Minntac Standard Pellets** as a mixture or its individual components.

f. No Germ Cell Mutagenicity data available for **Minntac Standard Pellets** as a mixture. The following Germ Cell Mutagenicity information was found for the components:
- **Iron Oxide:** Both positive and negative data.

g. Carcinogenicity: IARC, NTP, and OSHA do not list **Minntac Standard Pellets** as carcinogens. The following Carcinogenicity information was found for the components:
- **Iron Oxide (Fe_2O_3):** IARC-3, unclassifiable as to carcinogenicity in humans; ACGIH TLV-A4, not classifiable as a human carcinogen
- **Silicon Dioxide:** IARC-1 (silica, crystalline), carcinogen to humans; ACGIH TLV-A2 (silica, crystalline), suspected human carcinogen; NTP–K, known to be a carcinogen; NIOSH–Ca, potential occupational carcinogen; OSHA-Ca, carcinogen.
- **Silica, fused:** IARC-3, unclassifiable as to carcinogenicity in humans

h. No Toxic Reproduction data available for **Minntac Standard Pellets** as a mixture or its individual components.

i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Minntac Standard Pellets** as a mixture. The following STOT following a Single Exposure data was found for the components:
- **Iron Oxide:** May cause lung irritation.
- **Silicon Dioxide:** Single exposure to very high airborne levels may cause lung irritation in exposed humans.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Minntac Standard Pellets** as a whole. The following STOT following Repeated Exposure data was found for the components:
- **Iron Ore Pellets:** Rat inhalation 2 week iron oxide doses 185, 195 and 210 mg/m^3 No effect level as there was an increase in all dose groups in lung weight with accumulation of test article in lungs colors black, yellow and red oxides.
- **Iron Oxide:** Some pulmonary and lung effects reported.
- **Silicon Dioxide:** Repeated exposure to crystalline silica causes silicosis and kidney damage as well as increased incidence of autoimmune disorders in humans.

Section 11 - Toxicological Information (continued)

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2020, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS).

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s):

Acute Effects by Component:

- **IRON (and Iron Oxide):** Iron is harmful if swallowed, causes skin irritation, and causes eye irritation. Contact with iron oxide has been reported to cause skin irritation and serious eye damage.
- **METALLIC SILICATES:** Magnesium Silicate may irritate the eyes.
- **AMORPHOUS SILICA (SILICON DIOXIDE):** Not Reported/ Not Classified
- **CRYSTALINE SILICA (Silicon Dioxide):** Causes irritation and inflammation of the respiratory tract. May cause abrasion of the cornea. Inhalation may cause cough. A single exposure to very high airborne levels may cause lung irritation in exposed humans.

Delayed (chronic) Effects by Component:

- **IRON (as Iron Oxide):** Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign lung disease, called siderosis, which is observable as an x-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.
- **METALLIC SILICATES:** Magnesium Silicate is suspected of causing cancer by inhalation. Lifetime inhalation exposure of rats and mice to atmospheres of magnesium silicate resulted in interstitial fibrosis of the lung and reduced pulmonary function in rats at $\geq$ 6 mg/m^3. Calcium Silicate exposure to Wollastonite miners suggests that occupational exposure can cause impaired respiratory function and pneumoconiosis.
- **AMORPHOUS SILICA (SILICON DIOXIDE):** Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust. Eye contact with pure material can cause particulate irritation. Skin contact with silicon dusts may cause physical abrasion.
- **CRYSTALINE SILICA (Silicon Dioxide):** Chronic exposure can cause silicosis, a form of lung scarring that can cause shortness of breath, reduced lung function, and in severe cases, death. Repeated exposure may cause kidney damage as well as increased incidence of autoimmune disorder.

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial): No data available for the product, **Minntac Standard Pellets** as a whole. However, individual components of the product have been found to be toxic to the environment. Dusts may migrate into soil and groundwater and be ingested by wildlife as follows:

- **Iron Oxide**: LC_{50}: >1000 mg/L; Fish

12(b) Persistence & Degradability: No Data Available

12(c) Bioaccumulative Potential: No Data Available

12(d) Mobility (in soil): No Data Available

12(e) Other Adverse Effects: None Known

Additional Information:

Hazard Category: No Category **Signal Word:** No Signal Word

Hazard Symbol: No Hazard Symbol

Hazard Statement: No Hazard Statement

Section 13 - Disposal Considerations

Disposal: Dispose of contents/container in accordance with local/regional/international regulations.

Container Cleaning and Disposal: Follow applicable federal, state and local regulations. Observe safe handling precautions. European Waste Catalogue 10-02-99 (wastes not otherwise specified) or 16-03-04 (organic waste other than those specified).

Please note this information is for Minntac Standard Pellets in its original form. Any alterations can void this information.

Section 14 - Transport Information

14 (a-g) Transportation Information:

US Department of Transportation (DOT) under 49 CFR 172.101 does not regulate **Minntac Standard Pellets** as a hazardous material. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: Minntac Standard Pellets **Shipping Symbols:** Not Applicable (NA) **Hazard Class:** NA **UN No.:** NA **Packing Group:** NA **DOT/ IMO Label:** NA **Special Provisions (172.102):** NA	**Packaging Authorizations** **a) Exceptions:** NA **b) Non-bulk:** NA **c) Bulk:** NA	**Quantity Limitations** **a) Passenger Aircraft or Rail:** NA **b) Cargo Aircraft Only:** NA **Vessel Stowage Location:** NA **DOT Reportable Quantities**: NA

Section 14 - Transport Information (continued)

International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation.

Regulations Concerning the International Carriage of Dangerous Goods by Road (ADR) does not regulate **Minntac Standard Pellets** as a hazardous material.

Shipping Name: Minntac Standard Pellets **Classification Code:** NA **UN No.:** NA **Packing Group:** NA **ADR Label:** NA **Special Provisions:** NA **Limited Quantities:** NA	**Packaging** **a) Packing Instructions:** NA **b) Special Packing Provisions:** NA **c) Mixed Packing Provisions:** NA	**Portable Tanks & Bulk Containers** **a) Instructions:** NA **b) Special Provisions:** NA

International Air Transport Association (IATA) does not regulate **Minntac Standard Pellets** as a hazardous material.

Shipping Name: Minntac Standard Pellets **Class/Division:** NA **Hazard Label (s):** NA **UN No.:** NA **Packing Group:** NA **Excepted Quantities (EQ):** NA	**Passenger & Cargo Aircraft**		**Cargo Aircraft Only:**	**Special Provisions:**
	Limited Quantity (EQ)		**Pkg Inst:** NA **Max Net Qty/Pkg:** NA	NA **ERG Code:** NA
	Pkg Inst: NA **Max Net Qty/Pkg:** NA	**Pkg Inst:** NA **Max Net Qty/Pkg:** NA		

Pkg Inst – Packing Instructions Max Net Qty/Pkg – Maximum Net Quantity per Package ERG – Emergency Response Drill Code

Minntac Standard Pellets does not have a **Transport Dangerous Goods (TDG)** classification.

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to a U. S. Steel product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.* This product and/or its constituents are subject to the following regulations:

SARA Potential Hazard Categories: Immediate Acute Health Hazard, delayed Chronic Health Hazard

SARA 313 Supplier Notification: The product, **Minntac Standard Pellets** does not contain any of the toxic chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

State Regulations: The product, **Minntac Standard Pellets** as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

California Prop. 65:  This product can expose you to crystalline silica (airborne particles of respirable size only), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Other Regulations:

WHMIS Classification (Canadian): The product, **Minntac Standard Pellets** is not listed as a whole. However individual components are listed.

Ingredients	WHMIS Classification
Silica Quartz	Carcinogenicity - Category 1A; Specific target organ toxicity - repeated exposure - Category 1

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Prepared By: United States Steel Corporation

Revision History:

12/31/2020 – Update to sections 2, 8, 11, 15
07/01/2017 – Update WHMIS 2015
04/14/2015 - Revision
07/17/2014 - Update to OSHA HAZ COM 2012
03/05/2011 – Update of content and format to comply with GHS
09/22/2005 - Original Issue date

Expiration Date: 12/31/2023

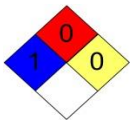
Additional Information:

Hazardous Material Identification System (HMIS) Classification

Health Hazard	**1**
Fire Hazard	**0**
Physical Hazard	**0**

HEALTH= **1**, * Denotes possible chronic hazard if airborne dusts or fumes are generated Irritation or minor reversible injury possible.
FIRE= **0**, Materials that will not burn.
PHYSICAL HAZARDS = **0**, Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.

National Fire Protection Association (NFPA)



HEALTH = **1**, Exposure could cause irritation but only minor residual injury even if no treatment is given.
FIRE = **0,** Materials that will not burn.
INSTABILITY = **0**, Normally stable, even under fire exposure conditions, and are not reactive with water.

Section 16 - Other Information (continued)

ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	**NIF**	No Information Found
BEIs	Biological Exposure Indices	**NIOSH**	National Institute for Occupational Safety and Health
CAS	Chemical Abstracts Service	**NTP**	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	**ORC**	Organization Resources Counselors
CFR	Code of Federal Regulations	**OSHA**	Occupational Safety and Health Administration
CNS	Central Nervous System	**PEL**	Permissible Exposure Limit
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract	**PNOR**	Particulate Not Otherwise Regulated
HMIS	Hazardous Materials Identification System	**PNOC**	Particulate Not Otherwise Classified
IARC	International Agency for Research on Cancer	**PPE**	Personal Protective Equipment
LC50	Median Lethal Concentration	**ppm**	parts per million
LD50	Median Lethal Dose	**RCRA**	Resource Conservation and Recovery Act
LD_{Lo}	Lowest Dose to have killed animals or humans	**RTECS**	Registry of Toxic Effects of Chemical Substances
LEL	Lower Explosive Limit	**SARA**	Superfund Amendment and Reauthorization Act
$\mu g/m^3$	microgram per cubic meter of air	**SCBA**	Self-contained Breathing Apparatus
mg/m^3	milligram per cubic meter of air	**STEL**	Short-term Exposure Limit
mppcf	million particles per cubic foot	**TLV**	Threshold Limit Value
SDS	Safety Data Sheet	**TWA**	Time-weighted Average
MSHA	Mine Safety and Health Administration	**UEL**	Upper Explosive Limit
NFPA	National Fire Protection Association		

Disclaimer: This information is taken from sources or based upon data believed to be reliable. However, United States Steel Corporation makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.