



# United States Steel Corporation

WWTP Activated Sludge

Safety Data Sheet (SDS)

USS IHS Number: 13961

Locations: Clairton, Gary Works and Granite City Works

Original: 12/16/2010

Revision: 08/15/2017

Expiration: 08/15/2020

## Section 1 – Identification

1(a) Product Identifier used on Label: WWTP Activated Sludge

1(b) Other Means of Identification: Waste Water Treatment Plant Activated Sludge

1(c) Recommended use of the chemical and restrictions on use: None

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

United States Steel Corporation Phone number: (412) 433-6840 (8:00 am to 5:00 pm)  
600 Grant Street, Room 1662 FAX: (412) 433-5019  
Pittsburgh, PA 15219-2800

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

## Section 2 – Hazard(s) Identification

2(a) Classification of the Chemical: WWTP Activated Sludge is NOT considered a hazardous material according to the criteria specified in REACH [REGULATION (EC) No 1907/2006] and CLP [REGULATION (EC) No 1272/2008] and OSHA 29 CFR 1910.1200 Hazard Communication Standard. 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): Not Applicable (NA)

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
Water*	7732-18-5	231-791-2	75-99

EC- European Community

CAS- Chemical Abstract Service

\* Activated Sludge consists primarily of of water and bacteria (both living and dead) produced from an activated sludge process.

## Section 4 – First-aid Measures

4(a) Description of Necessary Measures:

- **Inhalation:** If inhaled: Remove person to fresh air and keep comfortable for breathing.
- **Eye Contact:** If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **Skin Contact:** If on skin: Rinse skin with water/shower.
- **Ingestion:** If swallowed: Rinse mouth. Do NOT induce vomiting.

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

Acute effects:

- **Inhalation:** Breathing mist and vapors may cause irritation to the respiratory tract.
- **Eye:** May cause irritation, redness, and pain.
- **Skin:** May cause irritation to skin.
- **Ingestion:** May cause irritation to the gastrointestinal tract and/or nausea.

**Chronic Effects:** Chronic inhalation of vapors is associated with the following conditions: Prolonged or repeated skin contact may cause dermatitis or irritation. Prolonged or repeated exposures may result in respiratory disorders.

**Section 4 – First-aid Measures (continued)**

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

**Section 5 – Fire-fighting Measures**

**5(a) Suitable (and Unsuitable) Extinguishing Media:** Extinguish fire using agent suitable for type of surrounding fire.

**5(b) Specific Hazards Arising from the Chemical:** None Known

**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:** 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:** Avoid inhalation or contact with skin or eyes. Maintain all surfaces as free as practical of accumulation of material.

**7(b) Conditions for Safe Storage, including any Incompatibilities:** Isolate from incompatible substances.

**Section 8 - Exposure Controls / Personal Protection**

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

Ingredients	OSHA PEL <sup>1</sup>	ACGIH TLV <sup>2</sup>	NIOSH REL <sup>3</sup>	IDLH <sup>4</sup>
None	NA	NA	NA	NA

NE - None Established

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. 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. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures.
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.

**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.

**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.

# WWTP Activated Sludge

USS IHS No.: 13961

Rev. 08/17

## Section 9 - Physical and Chemical Properties

<b>9(a) Appearance (physical state, color, etc.):</b> Sludge, slurry, brown	<b>9(j) Upper/Lower Flammability or Explosive Limits:</b> NA
<b>9(b) Odor:</b> musty odor	<b>9(k) Vapor Pressure:</b> NA
<b>9(c) Odor Threshold:</b> NA	<b>9(l) Vapor Density (Air = 1):</b> NA
<b>9(d) pH:</b> 6-8	<b>9(m) Relative Density:</b> 1.01 SG
<b>9(e) Melting Point/Freezing Point:</b> 30°F	<b>9(n) Solubility(ies):</b> Soluble
<b>9(f) Initial Boiling Point and Boiling Range:</b> 210°F	<b>9(o) Partition Coefficient n-octanol/water:</b> NA
<b>9(g) Flash Point:</b> >205°F	<b>9(p) Auto-ignition Temperature:</b> ND
<b>9(h) Evaporation Rate:</b> NA	<b>9(q) Decomposition Temperature:</b> ND
<b>9(i) Flammability (solid, gas):</b> Not Flammable, Not Combustible	<b>9(r) Viscosity:</b> 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:** WWTP Activated Sludge is stable under normal storage and handling conditions.
- 10(c) Possibility of Hazardous Reaction:** None Known
- 10(d) Conditions to Avoid:** None Known
- 10(e) Incompatible Materials:** None Known
- 10(f) Hazardous Decomposition Products:** None Known

## Section 11 - Toxicological Information

- 11(a-e) Information on Toxicological Effects:** None Known
- No LC<sub>50</sub> or LD<sub>50</sub> has been established for WWTP Activated Sludge.
  - No Skin (Dermal) Irritation data has been determined for WWTP Activated Sludge.
  - No Eye Irritation information was found for WWTP Activated Sludge.
  - No Skin (Dermal)/Respiratory Sensitization data available for WWTP Activated Sludge.
  - No Aspiration Hazard data available for WWTP Activated Sludge.
  - No Germ Cell Mutagenicity data available for WWTP Activated Sludge.
  - Carcinogenicity: IARC, NTP, and OSHA do not list WWTP Activated Sludge as a carcinogen.
  - No Toxic Reproduction data available for WWTP Activated Sludge.
  - No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for WWTP Activated Sludge.
  - No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for WWTP Activated Sludge.

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 20179, 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:** None Known

**Delayed (chronic) Effects by Component:** None Known

## Section 12 - Ecological Information

- 12(a) Ecotoxicity (aquatic & terrestrial):** No Data Available
- 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

## WWTP Activated Sludge

USS IHS No.: 13961

Rev. 08/17

### 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 19 08 11 - Sludges containing dangerous substances from biological treatment of industrial waste water; hazardous waste.

**Please note this information is for WWTP Activated Sludge 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 **WWTP Activated Sludge** 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.

<b>Shipping Name:</b> WWTP Activated Sludge <b>Shipping Symbols:</b> NA <b>Hazard Class:</b> NA <b>UN No.:</b> NA <b>Packing Group:</b> NA <b>DOT/IMO Label:</b> NA <b>Special Provisions (172.102):</b> NA	<b>Packaging Authorizations</b> <b>a) Exceptions:</b> NA <b>b) Non-bulk:</b> NA <b>c) Bulk:</b> NA	<b>Quantity Limitations</b> <b>a) Passenger Aircraft or Rail:</b> NA <b>b) Cargo Aircraft Only:</b> NA  <b>Vessel Stowage Location:</b> NA  <b>DOT reportable quantities:</b> NA
---	---	--

**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 **WWTP Activated Sludge** as a hazardous material.

<b>Shipping Name:</b> WWTP Activated Sludge <b>Classification Code:</b> NA <b>UN No.:</b> NA <b>Packing Group:</b> NA <b>ADR Label:</b> NA <b>Special Provisions:</b> NA <b>Limited Quantities:</b> NA	<b>Packaging</b> <b>a) Packing Instructions:</b> NA <b>b) Special Packing Provisions:</b> NA <b>c) Mixed Packing Provisions:</b> NA	<b>Portable Tanks &amp; Bulk Containers</b> <b>a) Instructions:</b> NA <b>b) Special Provisions:</b> NA
--	--	---

**International Air Transport Association (IATA)** does not regulate **WWTP Activated Sludge** as a hazardous material.

<b>Shipping Name:</b> WWTP Activated Sludge <b>Class/Division:</b> NA <b>Hazard Label (s):</b> NA <b>UN No.:</b> NA <b>Packing Group:</b> NA <b>Excepted Quantities (EQ):</b> NA	<b>Passenger &amp; Cargo Aircraft</b> <b>Limited Quantity (EQ)</b> <b>Pkg Inst:</b> NA <b>Max Net Qty/Pkg:</b> NA	<b>Cargo Aircraft Only</b> <b>Pkg Inst:</b> NA <b>Max Net Qty/Pkg:</b> NA	<b>Special Provisions:</b> NA  <b>ERG Code:</b> NA
---	---	--	---

Pkg Inst – Packing Instructions

Max Net Qty/Pkg – Maximum Net Quantity per Package

ERG – Emergency Response Drill Code

**WWTP Activated Sludge** 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, **WWTP Activated Sludge** 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, **WWTP Activated Sludge** is listed in some state regulations.

California Prop. 65: Does not contain elements known to the State of California to cause cancer or reproductive toxicity.

**Other Regulations:**

**WHMIS Classification (Canadian):** The product, **WWTP Activated Sludge** is not listed.

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.

# WWTP Activated Sludge

USS IHS No.: 13961

Rev. 08/17

## Section 16 - Other Information

**Prepared By:** United States Steel Corporation

**Revision History:**

08/15/2017 – Update WHMIS 2015

12/10/2014 - Update to OSHA HAZCOM 2012

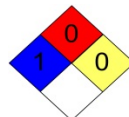
**Expiration Date:** 08/15/2020

**Additional Information:**

**Hazardous Material Identification System (HMIS) Classification**

<b>Health Hazard</b>	<b>1</b>
<b>Fire Hazard</b>	<b>0</b>
<b>Physical Hazard</b>	<b>0</b>

**National Fire Protection Association (NFPA)**



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.

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.

**ABBREVIATIONS/ACRONYMS:**

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;"><b>ACGIH</b></td><td style="padding: 2px;">American Conference of Governmental Industrial Hygienists</td></tr> <tr><td style="padding: 2px;"><b>BEIs</b></td><td style="padding: 2px;">Biological Exposure Indices</td></tr> <tr><td style="padding: 2px;"><b>CAS</b></td><td style="padding: 2px;">Chemical Abstracts Service</td></tr> <tr><td style="padding: 2px;"><b>CERCLA</b></td><td style="padding: 2px;">Comprehensive Environmental Response, Compensation, and Liability Act</td></tr> <tr><td style="padding: 2px;"><b>CFR</b></td><td style="padding: 2px;">Code of Federal Regulations</td></tr> <tr><td style="padding: 2px;"><b>CNS</b></td><td style="padding: 2px;">Central Nervous System</td></tr> <tr><td style="padding: 2px;"><b>GI, GIT</b></td><td style="padding: 2px;">Gastro-Intestinal, Gastro-Intestinal Tract</td></tr> <tr><td style="padding: 2px;"><b>HMIS</b></td><td style="padding: 2px;">Hazardous Materials Identification System</td></tr> <tr><td style="padding: 2px;"><b>IARC</b></td><td style="padding: 2px;">International Agency for Research on Cancer</td></tr> <tr><td style="padding: 2px;"><b>LC50</b></td><td style="padding: 2px;">Median Lethal Concentration</td></tr> <tr><td style="padding: 2px;"><b>LD50</b></td><td style="padding: 2px;">Median Lethal Dose</td></tr> <tr><td style="padding: 2px;"><b>LD<sub>Lo</sub></b></td><td style="padding: 2px;">Lowest Dose to have killed animals or humans</td></tr> <tr><td style="padding: 2px;"><b>LEL</b></td><td style="padding: 2px;">Lower Explosive Limit</td></tr> <tr><td style="padding: 2px;"><b>µg/m<sup>3</sup></b></td><td style="padding: 2px;">microgram per cubic meter of air</td></tr> <tr><td style="padding: 2px;"><b>mg/m<sup>3</sup></b></td><td style="padding: 2px;">milligram per cubic meter of air</td></tr> <tr><td style="padding: 2px;"><b>mppcf</b></td><td style="padding: 2px;">million particles per cubic foot</td></tr> <tr><td style="padding: 2px;"><b>SDS</b></td><td style="padding: 2px;">Safety Data Sheet</td></tr> <tr><td style="padding: 2px;"><b>MSHA</b></td><td style="padding: 2px;">Mine Safety and Health Administration</td></tr> <tr><td style="padding: 2px;"><b>NFPA</b></td><td style="padding: 2px;">National Fire Protection Association</td></tr> </table>	<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists	<b>BEIs</b>	Biological Exposure Indices	<b>CAS</b>	Chemical Abstracts Service	<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act	<b>CFR</b>	Code of Federal Regulations	<b>CNS</b>	Central Nervous System	<b>GI, GIT</b>	Gastro-Intestinal, Gastro-Intestinal Tract	<b>HMIS</b>	Hazardous Materials Identification System	<b>IARC</b>	International Agency for Research on Cancer	<b>LC50</b>	Median Lethal Concentration	<b>LD50</b>	Median Lethal Dose	<b>LD<sub>Lo</sub></b>	Lowest Dose to have killed animals or humans	<b>LEL</b>	Lower Explosive Limit	<b>µg/m<sup>3</sup></b>	microgram per cubic meter of air	<b>mg/m<sup>3</sup></b>	milligram per cubic meter of air	<b>mppcf</b>	million particles per cubic foot	<b>SDS</b>	Safety Data Sheet	<b>MSHA</b>	Mine Safety and Health Administration	<b>NFPA</b>	National Fire Protection Association	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;"><b>NIF</b></td><td style="padding: 2px;">No Information Found</td></tr> <tr><td style="padding: 2px;"><b>NIOSH</b></td><td style="padding: 2px;">National Institute for Occupational Safety and Health</td></tr> <tr><td style="padding: 2px;"><b>NTP</b></td><td style="padding: 2px;">National Toxicology Program</td></tr> <tr><td style="padding: 2px;"><b>ORC</b></td><td style="padding: 2px;">Organization Resources Counselors</td></tr> <tr><td style="padding: 2px;"><b>OSHA</b></td><td style="padding: 2px;">Occupational Safety and Health Administration</td></tr> <tr><td style="padding: 2px;"><b>PEL</b></td><td style="padding: 2px;">Permissible Exposure Limit</td></tr> <tr><td style="padding: 2px;"><b>PNOR</b></td><td style="padding: 2px;">Particulate Not Otherwise Regulated</td></tr> <tr><td style="padding: 2px;"><b>PNOC</b></td><td style="padding: 2px;">Particulate Not Otherwise Classified</td></tr> <tr><td style="padding: 2px;"><b>PPE</b></td><td style="padding: 2px;">Personal Protective Equipment</td></tr> <tr><td style="padding: 2px;"><b>ppm</b></td><td style="padding: 2px;">parts per million</td></tr> <tr><td style="padding: 2px;"><b>RCRA</b></td><td style="padding: 2px;">Resource Conservation and Recovery Act</td></tr> <tr><td style="padding: 2px;"><b>RTECS</b></td><td style="padding: 2px;">Registry of Toxic Effects of Chemical Substances</td></tr> <tr><td style="padding: 2px;"><b>SARA</b></td><td style="padding: 2px;">Superfund Amendment and Reauthorization Act</td></tr> <tr><td style="padding: 2px;"><b>SCBA</b></td><td style="padding: 2px;">Self-contained Breathing Apparatus</td></tr> <tr><td style="padding: 2px;"><b>STEL</b></td><td style="padding: 2px;">Short-term Exposure Limit</td></tr> <tr><td style="padding: 2px;"><b>TLV</b></td><td style="padding: 2px;">Threshold Limit Value</td></tr> <tr><td style="padding: 2px;"><b>TWA</b></td><td style="padding: 2px;">Time-weighted Average</td></tr> <tr><td style="padding: 2px;"><b>UEL</b></td><td style="padding: 2px;">Upper Explosive Limit</td></tr> </table>	<b>NIF</b>	No Information Found	<b>NIOSH</b>	National Institute for Occupational Safety and Health	<b>NTP</b>	National Toxicology Program	<b>ORC</b>	Organization Resources Counselors	<b>OSHA</b>	Occupational Safety and Health Administration	<b>PEL</b>	Permissible Exposure Limit	<b>PNOR</b>	Particulate Not Otherwise Regulated	<b>PNOC</b>	Particulate Not Otherwise Classified	<b>PPE</b>	Personal Protective Equipment	<b>ppm</b>	parts per million	<b>RCRA</b>	Resource Conservation and Recovery Act	<b>RTECS</b>	Registry of Toxic Effects of Chemical Substances	<b>SARA</b>	Superfund Amendment and Reauthorization Act	<b>SCBA</b>	Self-contained Breathing Apparatus	<b>STEL</b>	Short-term Exposure Limit	<b>TLV</b>	Threshold Limit Value	<b>TWA</b>	Time-weighted Average	<b>UEL</b>	Upper Explosive Limit
<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists																																																																										
<b>BEIs</b>	Biological Exposure Indices																																																																										
<b>CAS</b>	Chemical Abstracts Service																																																																										
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act																																																																										
<b>CFR</b>	Code of Federal Regulations																																																																										
<b>CNS</b>	Central Nervous System																																																																										
<b>GI, GIT</b>	Gastro-Intestinal, Gastro-Intestinal Tract																																																																										
<b>HMIS</b>	Hazardous Materials Identification System																																																																										
<b>IARC</b>	International Agency for Research on Cancer																																																																										
<b>LC50</b>	Median Lethal Concentration																																																																										
<b>LD50</b>	Median Lethal Dose																																																																										
<b>LD<sub>Lo</sub></b>	Lowest Dose to have killed animals or humans																																																																										
<b>LEL</b>	Lower Explosive Limit																																																																										
<b>µg/m<sup>3</sup></b>	microgram per cubic meter of air																																																																										
<b>mg/m<sup>3</sup></b>	milligram per cubic meter of air																																																																										
<b>mppcf</b>	million particles per cubic foot																																																																										
<b>SDS</b>	Safety Data Sheet																																																																										
<b>MSHA</b>	Mine Safety and Health Administration																																																																										
<b>NFPA</b>	National Fire Protection Association																																																																										
<b>NIF</b>	No Information Found																																																																										
<b>NIOSH</b>	National Institute for Occupational Safety and Health																																																																										
<b>NTP</b>	National Toxicology Program																																																																										
<b>ORC</b>	Organization Resources Counselors																																																																										
<b>OSHA</b>	Occupational Safety and Health Administration																																																																										
<b>PEL</b>	Permissible Exposure Limit																																																																										
<b>PNOR</b>	Particulate Not Otherwise Regulated																																																																										
<b>PNOC</b>	Particulate Not Otherwise Classified																																																																										
<b>PPE</b>	Personal Protective Equipment																																																																										
<b>ppm</b>	parts per million																																																																										
<b>RCRA</b>	Resource Conservation and Recovery Act																																																																										
<b>RTECS</b>	Registry of Toxic Effects of Chemical Substances																																																																										
<b>SARA</b>	Superfund Amendment and Reauthorization Act																																																																										
<b>SCBA</b>	Self-contained Breathing Apparatus																																																																										
<b>STEL</b>	Short-term Exposure Limit																																																																										
<b>TLV</b>	Threshold Limit Value																																																																										
<b>TWA</b>	Time-weighted Average																																																																										
<b>UEL</b>	Upper Explosive Limit																																																																										

**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.