

Safety Data Sheet (SDS)

Facilities: Warren and Monessen

Section 1 – Identification

- 1(a) Product Identifier used on Label:** Liquid Ammonium Sulfate (LAS)
- 1(b) Other means of identification:** Ammonium Sulfate Solution
- 1(c) Recommended use of the chemical and restrictions on use:** There are no known restrictions on use.
- 1(d) Name, address, and telephone number:**
 ArcelorMittal USA LLC Phone number : 219-787-4901 or
 1 South Dearborn Street email at: msdssupport@arcelormittal.com
 Chicago, IL 60603-9888
- 1(e) Emergency phone number:** 1-760-476-3962 (3E Company Code: 333211) or CHEMTREC (Day or Night): 1-800-424-9300

Section 2 – Hazard(s) Identification

- 2(a) Classification of the Chemical:** Liquid Ammonium Sulfate 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 “GLOBALY 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	60 - 73
Ammonium sulfate	7783-20-2	231-984-1	27-40

EC - European Community
 CAS - Chemical Abstract Service

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.
- 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.
- Delayed (chronic) Effects:**
 Prolonged or repeated skin contact may cause dermatitis or irritation. Prolonged or repeated exposures may result in respiratory disorders.
- 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:** Thermal decomposition may produce toxic gases/fumes such as NO_x, SO_x and ammonia.
- 5(c) Special protective equipment and precautions for fire-fighters:** Self-contained MSHA/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, ...

Section 5 - Fire-fighting Measures (continued)

5(c) Special protective equipment and precautions for fire-fighters (continued): ...should not be used. Evacuate area. Remove pressurized gas cylinders from the immediate vicinity. Cool containers exposed to flames with water until well after the fire is out. Close the valve if no risk is involved. Fight fire from a protected location. Prevent buildup of vapors or gases to explosive concentrations.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not release into sewers or waterways. Label 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 direct contact on skin, eyes or on clothing. Observe proper industrial hygiene practices. Emergency safety showers and eye wash stations should be present.

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 ¹	ACGIH TLV ²	NIOSH REL ³	IDLH ⁴
Ammonium sulfate	15 mg/m ³ (as total dust, PNOR) ⁵ 5.0 mg/m ³ (as respirable fraction, PNOR)	10 mg/m ³ (as inhalable fraction ⁶ , PNOS) ⁷ 3.0 mg/m ³ (as respirable fraction ⁸ , PNOS)	NE	NE

NE - None Established

1. OSHA Permissible Exposure Limits (PELs) 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 Peak is defined as the acceptable maximum peak for a maximum duration above the ceiling concentration for an eight-hour shift. A skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. 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. 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. A "skin" notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. ACGIH-TLVs are only recommended guidelines based upon consensus agreement of the membership of the ACGIH. As such, the ACGIH TLVs are for guideline use purposes and are not legal regulatory standards for compliance purposes. The TLVs are designed for use by individuals trained in the discipline of industrial hygiene relative to the evaluation of exposure to various chemical or biological substances and physical agents that may be found in the workplace.
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.
5. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by a limit which is the same as the inert or nuisance dust limit of 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction.
6. Inhalable fraction. The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2015 TLVs[®] and BEIs[®] (Biological Exposure Indices) Appendix D, paragraph A.
7. PNOS (Particulates Not Otherwise Specified). Particulates identified under the PNOS heading are "nuisance dusts" containing no asbestos and <1% crystalline silica.
8. 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 2015 TLVs[®] and BEIs[®] Appendix D, paragraph C.

8(b) Appropriate Engineering Controls: Use controls as appropriate to minimize exposure to fumes, vapors, gasses and heat during handling operations. Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust is necessary for use in enclosed or confined spaces. Provide sufficient general/local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits.

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 an acid gas/organic cartridge is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with an acid gas/organic cartridge 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...

Section 8 - Exposure Controls / Personal Protection (continued)

8(c) Individual Protection Measures (continued):

- **Respiratory Protection (continued):** ...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. Vinyl coated gloves should be worn. **Do Not Wear PVA or cloth 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.): Brownish-Yellow Liquid	9(j) Upper/lower Flammability or Explosive Limits: ND
9(b) Odor: Possible Slight Sulfur and Ammonia Aroma	9(k) Vapor Pressure: ND
9(c) Odor Threshold: NA	9(l) Vapor Density (Air = 1): ND
9(d) pH: 6.0 – 9.0	9(m) Relative Density: 1.19 – 1.23SG
9(e) Melting Point/Freezing Point: -38°C, -36.4 °F	9(n) Solubility(ies): Complete
9(f) Initial Boiling Point and Boiling Range: 50-200°C, 122- 392°F	9(o) Partition Coefficient n-octanol/water: ND
9(g) Flash Point: >205 °F, > 96.1°C	9(p) Auto-ignition Temperature: ND
9(h) Evaporation Rate: (Water = 1): >1	9(q) Decomposition Temperature: ND
9(i) Flammability (solid, gas): Non-flammable, Non-Combustible	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: Stable under normal storage and handling conditions.
- 10(c) Possibility of hazardous reaction: None Known
- 10(d) Conditions to Avoid: Storage or mixing with oxidizing agents.
- 10(e) Incompatible Materials: Oxidizers, Potassium and Ammonium Nitrate, Potassium Chlorate and Nitrate, Sodium Potassium Alloy, Ammonium Nitrate.
- 10(f) Hazardous Decomposition Products: Thermal decomposition may produce toxic gases/fumes such as NO_x, SO_x and ammonia.

Section 11 - Toxicological Information

11 Information on Toxicological Effects: Below is additional toxicological data regarding this product:

- The following LC₅₀ or LD₅₀ has been established for **Liquid Ammonium Sulfate** :
 - Rat LD₅₀ = 4250 mg/kg
 - Rat LD₅₀ > 2000 mg/kg
 - Mouse LD₅₀ > 2000 mg/kg (REACH)
- The following Skin (Dermal) Irritation data available for **Liquid Ammonium Sulfate**:
 - May be irritating to human skin (HSDB)
- The following Eye Irritation information was found for **Liquid Ammonium Sulfate**:
 - May be irritating to human skin (HSDB).
- No Skin (Dermal) Sensitization data available for **Liquid Ammonium Sulfate**.
- No Respiratory Sensitization data available for **Liquid Ammonium Sulfate**.
- No Germ Cell Mutagenicity data available for **Liquid Ammonium Sulfate**.
- Carcinogenicity: IARC, NTP, and OSHA do not list **Liquid Ammonium Sulfate** as a carcinogen.
- No Toxic Reproduction data available for **Liquid Ammonium Sulfate**.
- No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Liquid Ammonium Sulfate**.
- The following Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Liquid Ammonium Sulfate**.
 - Rat oral 1 yr Feed NOAEL 256 – 284 mg/kg Liver, kidney wt. increased spleen decrease. Rat 13 wk oral NOEL 886 mg/kg based on Diarrhea. (IUCLD, REACH, HSDB).

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Section 11 - Toxicological Information (continued)

11 Information on Toxicological Effects (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 2009, 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:

- **AMMONIA SULFATE:** Breathing mist and vapors can cause irritation to the respiratory tract. Symptoms may include coughing, shortness of breath and may cause increased pulmonary resistance, transient cough and broncho-constriction. Causes irritation to the eyes and skin.

Delayed (chronic) Effects by component:

- **AMMONIA SULFATE:** Prolonged or repeated exposures may result in respiratory disorders (Bronchitis), impaired lung function, soreness of mouth, discoloration and erosion of teeth.

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial):

- **Ammonia Sulfate:** *Agonus cataphractus* LC₅₀ = 130 -210 mg/L, *Leuciscus idus* LC₅₀ = 681 mg/L, *Lebistes reticulatus* LC₅₀ = 592 mg/L, *Brachydanio rerio* LC₅₀ = 480 mg/L, *Leuciscus idus* LC₅₀ = 460 - 1000 mg/L, *Brachydanio rerio* LC₅₀ = 250 mg/L

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 in accordance with Local, State, Federal and International regulations. Observe safe handling precautions.

Container Cleaning and Disposal: Follow Local, State, Federal and international regulations. Observe safe handling precautions.

Section 14 - Transport Information

14 (a-g) Transportation Information:

US Department of Transportation (DOT) under 49 CFR 172.101 does not regulates Liquid Ammonium Sulfate as a hazardous material. All Local, State, Federal and international regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: Not Applicable (NA) Shipping Symbols: 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) Group: NA c) Authorization: NA	Quantity Limitations a) Passenger, Aircraft, or Railcar: NA b) Cargo Aircraft Only: NA Vessel Stowage Requirements a) Vessel Stowage: NA b) Other: NA DOT Reportable Quantities: NA
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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 Liquid Ammonium Sulfate as a hazardous material.

Shipping Name: Not Applicable (NA) 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
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Section 14 - Transport Information (continued)

International Air Transport Association (IATA) does not regulate Liquid Ammonium Sulfate as a hazardous material.

Shipping Name: Not Applicable (NA) Class/Division: NA Hazard Label (s): NA UN No.: NA Packing Group: NA Excepted Quantities (EQ): NA	Passenger & Cargo Aircraft Limited Quantity (EQ)		Cargo Aircraft Only	Special Provisions:
	Pkg Inst: NA	Pkg Inst: NA	Pkg Inst: NA	NA
	Max Net Qty/Pkg: NA	Max Net Qty/Pkg: NA	Max Net Qty/Pkg: NA	ERG Code: NA

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

Transport Dangerous Goods (TDG) Classification: Liquid Ammonium Sulfate does not have a TDG classification.

Section 15 - Regulatory Information

Regulatory Information: The following listing of regulations relating to an ArcelorMittal 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:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product, **Liquid Ammonium Sulfate** as a whole is not listed. However, individual components are listed: Refer to Section 8, Exposure Controls and Personal Protection.

EPA Regulations: Ammonium Sulfate is not listed.

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

Regulations Key:

- CAA Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06])
- CERCLA Comprehensive Environmental Response, Compensation and Liability Act (42 USC Secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A)
- CWA Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06])
- RCRA Resource Conservation Recovery Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII)
- SARA Superfund Amendments and Reauthorization Act of 1986 Title III Section 302 Extremely Hazardous Substances (42 USC Secs. 11023, 13106; 40 CFR sec. 372.65) and Section 313 Toxic Chemicals (42 USC Secs. 11023, 13106; 40 CFR Sec. 372.65 [as of 6/30/05])
- TSCA Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976])
- SDWA Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974])

Section 313 Supplier Notification: This product, **Liquid Ammonium Sulfate** does not contain 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: Liquid Ammonium Sulfate is listed in the following state regulations:

- Pennsylvania Right to Know: Not Listed
- California Prop. 65: Does not contain elements known to the State of California to cause cancer or reproductive toxicity.
- New Jersey: Not Listed
- Minnesota: Not Listed
- Massachusetts: Ammonium Sulfate

Other Regulations:

WHMIS Classification (Canadian): Ammonium Sulfate (CAS 7783-20-2): Disclosure at 1.0%.

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: ArcelorMittal USA LLC

Original Issue Date: 05/15/2002

Update to SDS format: 06/08/2015

Additional Information:

Hazardous Material Identification System (HMIS) Classification

Health Hazard	1
Flammability	0
Physical Hazard	0

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.

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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
LOEL	Lowest Observed Effect Level	SCBA	Self-contained Breathing Apparatus
LOAEC	Lowest Observable Adverse Effect Concentration	SDS	Safety Data Sheet
µg/m³	microgram per cubic meter of air	STEL	Short-term Exposure Limit
mg/m³	milligram per cubic meter of air	TLV	Threshold Limit Value
mppcf	million particles per cubic foot	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. Our objective in sending this information is to help you protect the health and safety of your personnel and to comply with the OSHA Hazard Communication Standard and Title III of the Emergency Planning and Community Right-to-Know Act. ArcelorMittal USA LLC makes no warranty as to the absolute correctness, completeness, or sufficiency of any of the foregoing, or any additional, or other measures that may not be required under particular conditions. THIS ARCELORMITTAL USA LLC SDS MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING OR TRADE.

Liquid Ammonium Sulfate

Signal Word: **NA**

Symbols: **NA**

HAZARD STATEMENTS:

Not Applicable (NA)

PRECAUTIONARY STATEMENTS:

NA

SDS ID No.: AM USA-2003

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Original Issue Date: 05/15/2002

Revised: 06/08/2015