



DAKOTA GASIFICATION COMPANY

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SAFETY DATA SHEET



RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY

Safety Data Sheet

Section 1: Identification

Product identifier

Product Name • Daksul 45 - Ammonium Sulfate

Relevant identified uses of the substance or mixture and uses advised against

Recommended use • Fertilizers, water treatment, fermentation, fireproofing compositions, viscose rayon, tanning, food additive.

Details of the supplier of the safety data sheet

Manufacturer • Dakota Gasification
420 County Road 26
Beulah, ND 58523-9400
United States

Telephone • (701) 873-6600
(General)

Emergency telephone number

Manufacturer • 800-424-9300 - CHEMTREC

Section 2: Hazard Identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Not classified

Label elements

OSHA HCS 2012

Hazard statements • No label element(s) required

Other hazards

OSHA HCS 2012 • This product is not considered hazardous under the U.S. OSHA 29 CFR 1910.1200 Hazard Communication Standard.

Canada

According to WHMIS

Classification of the substance or mixture

WHMIS • Not classified

Label elements

WHMIS • No label element(s) required

Other hazards

WHMIS • In Canada, the product mentioned above is not considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

Substances

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Ammonium sulfate	CAS:7783-20-2	99% TO 100%	Ingestion/Oral-Rat LD50 • 2840 mg/kg	OSHA HCS 2012: Not Classified	NDA

Mixtures

- Material does not meet the criteria of a mixture.

Section 4: First-Aid Measures

Description of first aid measures

- Inhalation** • Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.
- Skin** • In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse.
- Eye** • In case of contact with substance, immediately flush eyes with running water for at least 20 minutes.
- Ingestion** • Give plenty of water to drink. Do not give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

- Notes to Physician** • No specific actions or treatments recommended related to exposure to this material.

Section 5: Fire-Fighting Measures

Extinguishing media

- Suitable Extinguishing Media** • In case of fire use media as appropriate for surrounding fire.
- Unsuitable Extinguishing Media** • No data available.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Contact with strong oxidizers may cause fire and explosion.

Hazardous Combustion Products • No data available.

Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

- Personal Precautions** • Do not walk through spilled material. Use appropriate Personal Protective Equipment (PPE)
- Emergency Procedures** • As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. Keep unauthorized personnel away.

Environmental precautions

- LARGE SPILLS: Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

- Containment/Clean-up Measures** • Avoid generating dust.
- SMALL DRY SPILLS: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.
- LARGE SPILLS: Cover powder spill with plastic sheet or tarp to minimize spreading. Flush spill area with water spray.

Section 7 - Handling and Storage

Precautions for safe handling

Handling • Use only with adequate ventilation. Avoid breathing dust. Wear appropriate personal protective equipment. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Conditions for safe storage, including any incompatibilities

Storage • Keep container/package tightly closed and in a well-ventilated place. Keep away from incompatible materials.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines • No applicable exposure limits available for product or components.

Exposure controls

Engineering Measures/Controls • Dilution ventilation. Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

Personal Protective Equipment

- Respiratory** • In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134 Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.
- Eye/Face** • Wear safety goggles.
- Hands** • Wear appropriate gloves.
- Skin/Body** • Use chemical resistant gloves of neoprene, natural rubber, or PVC. Wear long sleeves and/or protective coveralls.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Brown-gray to white crystals or granules with no odor.
Color	Brown-gray to white.	Odor	Odorless
Odor Threshold	No data available		
General Properties			
Boiling Point	No data available	Melting Point	280 C(536 F)
Decomposition Temperature	> 280 C(> 536 F)	pH	5.5 1.3% Solution
Specific Gravity/Relative Density	1.77 Water=1	Water Solubility	Appreciable > 10 %
Viscosity	Not relevant		
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available		
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable under normal temperatures and pressures.

Possibility of hazardous reactions

- Hazardous polymerization not indicated.

Conditions to avoid

- Avoid contact with heat. Temperatures above 280°C (536°F) causes material to decompose.

Incompatible materials

- Contact with strong oxidizers may cause fire or explosion. Incandescent reaction on heating with potassium chlorate. Reaction with sodium hypochlorite forms the unstable explosive trichloride. Copper, brass, bronze, strong acids. Contact with strong oxidizers may cause fire or explosion. Incandescent reaction on heating with potassium chlorate. Reaction with sodium hypochlorite forms the unstable explosive trichloride. Copper, brass, bronze, strong acids.

Hazardous decomposition products

- Ammonia and Sulfur Oxides.

Section 11 - Toxicological Information

Information on toxicological effects

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012•No data available
Aspiration Hazard	OSHA HCS 2012•No data available
Carcinogenicity	OSHA HCS 2012•No data available
Germ Cell Mutagenicity	OSHA HCS 2012•No data available
Skin corrosion/Irritation	OSHA HCS 2012•No data available
Skin sensitization	OSHA HCS 2012•No data available
STOT-RE	OSHA HCS 2012•No data available
STOT-SE	OSHA HCS 2012•No data available
Toxicity for Reproduction	OSHA HCS 2012•No data available
Respiratory sensitization	OSHA HCS 2012•No data available
Serious eye damage/Irritation	OSHA HCS 2012•No data available

Route(s) of entry/exposure • Inhalation, Skin, Eye, Ingestion

Medical Conditions Aggravated by Exposure • Disorders of the lungs.

Potential Health Effects

Inhalation

Acute (Immediate) • Exposure to dust may cause irritation. Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may affect the lungs but reactions are typically reversible.

Chronic (Delayed) • No data available

Skin

Acute (Immediate) • Exposure to dust may cause mechanical irritation.

Chronic (Delayed) • No data available.

Eye

Acute (Immediate) • Exposure to dust may cause mechanical irritation. Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.

Chronic (Delayed) • No data available.

Ingestion

Acute (Immediate) • Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.

Chronic (Delayed) • No data available.

Section 12 - Ecological Information

Toxicity

- One use of Ammonium Sulfate is as a fertilizer; therefore, waste ammonium sulfate might be used as a fertilizer. If discarded to waterways, it may promote eutrophication.

Persistence and degradability

- Non-mandatory section - information about this substance not compiled for this reason.

Bioaccumulative potential

- Non-mandatory section - information about this substance not compiled for this reason.

Mobility in Soil

- Non-mandatory section - information about this substance not compiled for this reason.

Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	NDA	Not regulated	NDA	NDA	NDA
TDG	NDA	Not regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not regulated	NDA	NDA	NDA

Special precautions for user • None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • Not relevant.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • None

State Right To Know				
Component	CAS	MA	NJ	PA
Ammonium sulfate	7783-20-2	Yes	No	Yes

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
Ammonium sulfate	7783-20-2	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

- Ammonium sulfate

7783-20-2

Uncontrolled product according to WHMIS classification criteria

Canada - WHMIS - Ingredient Disclosure List

- Ammonium sulfate

7783-20-2

1 %

Environment

Canada - 2004 NPRI (National Pollutant Release Inventory)

- Ammonium sulfate

7783-20-2

Not Listed

Canada - 2005 NPRI (National Pollutant Release Inventory)

- Ammonium sulfate

7783-20-2

Not Listed

Canada - CEPA - Greenhouse Gases Subject to Mandatory Reporting		
•Ammonium sulfate	7783-20-2	Not Listed
Canada - CEPA - Priority Substances List		
•Ammonium sulfate	7783-20-2	Not Listed
Canada - DWQ (Drinking Water Quality) - IMACs		
•Ammonium sulfate	7783-20-2	Not Listed
Other		
Canada - Accelerated Reduction/Elimination of Toxics (ARET)		
•Ammonium sulfate	7783-20-2	Not Listed
Canada New Brunswick		
Environment		
Canada - New Brunswick - Ozone Depleting Substances - Schedule A		
•Ammonium sulfate	7783-20-2	Not Listed
Canada - New Brunswick - Ozone Depleting Substances - Schedule B		
•Ammonium sulfate	7783-20-2	Not Listed
United States		
Labor		
U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - OSHA - Specifically Regulated Chemicals		
•Ammonium sulfate	7783-20-2	Not Listed
Environment		
U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
•Ammonium sulfate	7783-20-2	Not Listed
United States - California		
Environment		
U.S. - California - Proposition 65 - Carcinogens List		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - California - Proposition 65 - Developmental Toxicity		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
•Ammonium sulfate	7783-20-2	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
•Ammonium sulfate	7783-20-2	Not Listed
United States - Pennsylvania		
Labor		
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List		
•Ammonium sulfate	7783-20-2	
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances		
•Ammonium sulfate	7783-20-2	Not Listed

Section 16 - Other Information

Last Revision Date • 17/December/2013
Preparation Date • 28/January/2010

Key to abbreviations

NDA = No data available

Disclaimer/Statement of Liability

- The information contained in this Safety Data Sheet (SDS) is believed to be correct since it was obtained from sources we believe are reliable. However no representation, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications, hazards connected with the use of the material, or the results to be obtained from the use thereof. User assumes all risks and liability of any use, processing or handling of any material, variations in methods, conditions and equipment used to store, handle, or process the material and hazards connected with the use of the material are solely the responsibility of the user and remain at his sole discretion. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe work place to examine all aspects of its operation and to determine if or where precautions, in addition to those described herein, are required.