

# Anhydrous Ammonia - Refrigeration Grade

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 1: Identification

#### 1.1. Identification

Product form : Substance  
Substance name : Anhydrous Ammonia - Refrigeration Grade  
Product code : M11004

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

JR Simplot Company  
P.O. Box 70013  
Boise, ID 83707  
T 1-208-336-2110

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Acute toxicity (inhalation:gas) Category 4 H332 Harmful if inhaled  
Skin corrosion/irritation Category 1A H314 Causes severe skin burns and eye damage

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H314 - Causes severe skin burns and eye damage  
H332 - Harmful if inhaled

Precautionary statements (GHS-US) :

P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash hands, forearms and face thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a poison center/doctor/...  
P312 - Call a poison center/doctor/... if you feel unwell  
P321 - Specific treatment (see ... on this label)  
P363 - Wash contaminated clothing before reuse  
P405 - Store locked up  
P501 - Dispose of contents/container to ...

#### 2.3. Other hazards which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

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### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Name : Anhydrous Ammonia - Refrigeration Grade

Name	Product identifier	%	GHS-US classification
Anhydrous Ammonia	(CAS No) 7664-41-7	99.9	Acute Tox. 3 (Inhalation:gas), H331 Skin Corr. 1A, H314 Aquatic Acute 1, H400

Full text of hazard classes and H-statements : see section 16

#### 3.2. Mixtures

Not applicable

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Immediately call a poison center or doctor/physician.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician. Call a poison center/doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects (acute and delayed)

- Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met. Harmful if inhaled.
- Symptoms/injuries : Causes severe skin burns and eye damage.
- Symptoms/injuries after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.

#### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

#### 5.2. Specific hazards arising from the chemical

- Reactivity : Product is not explosive. Reacts violently with water. Reacts exothermically with (some) acids. Thermal decomposition generates : Corrosive vapors.

#### 5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Ventilate area.

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### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Store away from other materials.  
Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact during pregnancy/while nursing.  
Hygiene measures : Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.  
Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Store in a well-ventilated place. Keep cool.  
Incompatible products : Strong bases. Strong acids.  
Incompatible materials : Sources of ignition. Direct sunlight.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Anhydrous Ammonia (7664-41-7)		
ACGIH	ACGIH TWA (ppm)	25 ppm
ACGIH	ACGIH STEL (ppm)	25 ppm

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

#### Hand protection:

Wear protective gloves

#### Eye protection:

Chemical goggles or face shield. Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

Wear appropriate mask

#### Other information:

Do not eat, drink or smoke during use.

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### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Clear, colorless gas.
Color	: Colourless
Odor	: Irritating/pungent odour
Odor threshold	: No data available
pH	: 11.6
Melting point	: No data available
Freezing point	: No data available
Boiling point	: -33.4 °C
Flash point	: Non-Flammable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: 92.9 mm Hg @15.6 C
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 0.00073 g/cm <sup>3</sup>
Molecular mass	: ≈ 17.03 g/mol
Solubility	: Complete.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Product is not explosive. Reacts violently with water. Reacts exothermically with (some) acids. Thermal decomposition generates : Corrosive vapors.

#### 10.2. Chemical stability

Not established.

#### 10.3. Possibility of hazardous reactions

Not established.

#### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapors.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Inhalation:gas: Harmful if inhaled.

Anhydrous Ammonia - Refrigeration Grade	
LD50 oral rat	350 mg/kg
LC50 inhalation rat (ppm)	5137 ppm/1h

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Anhydrous Ammonia - Refrigeration Grade	
ATE US (oral)	350 mg/kg body weight
ATE US (gases)	2568.5 ppmV/4h
Anhydrous Ammonia (7664-41-7)	
LD50 oral rat	350 mg/kg
ATE US (oral)	350 mg/kg body weight
ATE US (gases)	700 ppmV/4h

Skin corrosion/irritation	: Causes severe skin burns and eye damage. pH: 11.6
Serious eye damage/irritation	: Not classified pH: 11.6
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met. Harmful if inhaled.
Symptoms/injuries	: Causes severe skin burns and eye damage.
Symptoms/injuries after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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Anhydrous Ammonia (7664-41-7)	
LC50 fish 1	0.75 - 3.4 mg/l (96 h; Pimephales promelas; Ammonium ions)
LC50 other aquatic organisms 1	1 - 10 mg/l (96 h)
LC50 fish 2	0.52 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
TLM fish 1	0.2 - 5, Pisces; Nocivity test
Threshold limit other aquatic organisms 1	1 - 10, 96 h

### 12.2. Persistence and degradability

Anhydrous Ammonia - Refrigeration Grade	
Persistence and degradability	Not established.
Anhydrous Ammonia (7664-41-7)	
Persistence and degradability	Readily biodegradable in water. Ozonation in water. Biodegradable in the soil. No (test) data on mobility of the components available. Ozonation in the air. Not established.

### 12.3. Bioaccumulative potential

Anhydrous Ammonia - Refrigeration Grade	
Bioaccumulative potential	Not established.
Anhydrous Ammonia (7664-41-7)	
Log Pow	-1.14
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

### 12.4. Mobility in soil

No additional information available

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### 12.5. Other adverse effects

Effect on the global warming : No known effects from this product.  
GWPmix comment : No known effects from this product.

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to ...  
Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1005 Ammonia, anhydrous, 2.2  
UN-No.(DOT) : UN1005  
Proper Shipping Name (DOT) : Ammonia, anhydrous  
Class (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115  
Hazard labels (DOT) : 2.2 - Non-flammable gas



DOT Packaging Non Bulk (49 CFR 173.xxx) : 304  
DOT Packaging Bulk (49 CFR 173.xxx) : 314;315  
DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada  
DOT Special Provisions (49 CFR 172.102) : 13 - The words Inhalation Hazard shall be entered on each shipping paper in association with the shipping description, shall be marked on each non-bulk package in association with the proper shipping name and identification number, and shall be marked on two opposing sides of each bulk package. Size of marking on bulk package must conform to 172.302(b) of this subchapter. The requirements of 172.203(m) and 172.505 of this subchapter do not apply.  
T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.  
DOT Packaging Exceptions (49 CFR 173.xxx) : None  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : Forbidden  
DOT Vessel Stowage Location : D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.  
Transport/Additional information : 40 - Stow "clear of living quarters", 52 - Stow "separated from" acids, 57 - Stow "separated from" chlorine  
Other information : No supplementary information available.

### TDG

### Transport by sea

### Air transport

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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Anhydrous Ammonia	CAS No 7664-41-7	99.9%
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Anhydrous Ammonia (7664-41-7)	
CERCLA RQ	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb

#### 15.2. International regulations

##### CANADA

No additional information available

##### EU-Regulations

No additional information available

##### National regulations

No additional information available

#### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Anhydrous Ammonia (7664-41-7)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16: Other information

Other information : None.

Full text of H-phrases:

H314	Causes severe skin burns and eye damage
H331	Toxic if inhaled
H332	Harmful if inhaled
H400	Very toxic to aquatic life

SDS US (GHS HazCom 2012)

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