

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifier

**Product name:** Urea-Ammonium Nitrate Solution  
**Product code:** Urea-Ammonium Nitrate Solution  
**Synonym(s):** UAN, UAN Solution

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

**General use:** Fertilizer  
**Uses advised against:** None specified

### 1.3 Details of the supplier and of the safety data sheet

**Manufacturer/Distributor**  
 Methanol Holdings (Trinidad) Limited  
 Atlantic Avenue, Point Lisas Industrial Estate  
 Point Lisas, Trinidad, West Indies  
 +1-868-636-PRMN (7766)

**Non-Emergency Contact**  
*North America:* Helm Fertilizer Corp., +1 (813)-503-2018  
*Europe:* Helm AG, 011-19-40-23750  
*Trinidad:* Methanol Holdings (Trinidad) Limited, +1-868-636-2906

### 1.4 Emergency telephone number

*North America* Chemtrec: +1-800-424-9300  
*Europe* Giftinformationszentrum Nord: 011-49-551-19240  
*Trinidad* Proman Trinidad Headquarters: +1 (868)-636-7766

## SECTION 2 - HAZARDS IDENTIFICATION

### 2.1 Classification of substance or mixture

**Product definition:** Mixture

**Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008**  
 Not a hazardous substance or mixture according to OSHA or to European Union Legislation

### 2.2 Label elements

Not a dangerous substance or mixture according to GHS.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Repeated exposure may cause skin dryness and cracking.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Not applicable

### 3.2 Mixtures

% by Volume	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
30 - 50	Ammonium Nitrate	6484-52-2	229-347-8	-----	H272, H319
25 - 45	Urea	57-13-6	200-315-5	-----	-----

To the best of our knowledge there are no additional ingredients present in this product which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

## SECTION 4 - FIRST AID MEASURES

### 4.1 Description of first aid measures

**Inhalation:** If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. If unconscious, maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist or if the victim feels unwell, seek medical attention.

**Eyes:** Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do after first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.

**Skin:** Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes before reuse. If irritation persists, seek medical attention.

**Ingestion:** Rinse mouth with water if the victim is conscious. Remove dentures if present. DO NOT induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of vomit into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek immediate

medical attention.

#### 4.2 Most important symptoms and effects, both acute and delayed

##### Potential health symptoms and effects

**Eyes:** Causes eye irritation with redness, burning sensation, swelling and tearing. Mist or vapor may cause eye irritation.

**Skin:** May cause skin irritation with localized redness and discomfort. Prolonged and repeated exposure to unprotected skin may cause drying and cracking of the skin.

**Inhalation:** Inhalation of mist or vapor may be irritating to mucous membranes and to the respiratory system.

**Ingestion:** May cause irritation of the digestive tract with nausea, vomiting, abdominal pain and diarrhea. May be harmful if swallowed.

**Chronic:** Individuals with pre-existing skin, eye and respiratory disorders may be more susceptible to the effects of this product.

#### 4.3 Indication of any immediate medical attention and special treatment needed

##### Advice to doctor and hospital personnel

Treat symptomatically and supportively.

### SECTION 5 - FIRE FIGHTING MEASURES

#### 5.1 Extinguishing media

**Suitable methods of extinction:** Use extinguishing media suitable for the surrounding fire.

**Unsuitable methods of extinction:** No limitations of extinguishing agents are given for this material.

#### 5.2 Special hazards arising from the substance or mixture

Closed containers may rupture due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

**Explosion hazards:** When water evaporates from this product residues may contain ammonium nitrate, and solid ammonium nitrate when sensitized during decomposition may become unstable and explosive.

#### 5.3 Advice to firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. Water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

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

Evacuate non-essential personnel. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. NO SMOKING. Clean up spills immediately. Spill creates a slip hazard.

#### 6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

#### 6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. DO NOT FLUSH SPILL DOWN THE DRAIN. Cover drains and contain spill. Cover spill with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect material using non-sparking tools and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Do not allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Clean contaminated area with soap and water. Dispose of via a licensed waste disposal contractor.

#### 6.4 Reference to other sections

See Section 13 for additional waste treatment information.

### SECTION 7 - HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. Do not inhale mist or vapor. NO SMOKING. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Open containers slowly to control possible pressure release. Wash contaminated clothing and shoes thoroughly before reuse.

##### Advice on protection against fire and explosion

Solution does not present a fire or explosion hazard. When water evaporates from this product residues may contain ammonium nitrate, and solid ammonium nitrate when sensitized during decomposition may become unstable and explosive.

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

Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Keep away from heat and ignition sources. Do not store in direct sunlight. Transfer only to approved containers having correct labeling. Keep containers tightly closed when not in use. Protect containers against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers are hazardous when empty as they contain product residue. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Keep out of reach of children.

### 7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

## SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

#### Occupational exposure limit values

CAS Number	Ingredient	OSHA PEL	ACGIH TLV	NIOSH
7664-41-7	Anhydrous Ammonia (free ammonia)	50 ppm; 35 mg/m <sup>3</sup> TWA	25 ppm; 17 mg/m <sup>3</sup> TWA 35 ppm; 24 mg/m <sup>3</sup> STEL	25 ppm; 17 mg/m <sup>3</sup> TWA 35 ppm; 24 mg/m <sup>3</sup> STEL 300 ppm IDHL

### 8.2 Exposure controls

**Engineering measures:** Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

**Individual protection measures:** Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

**Hygiene measures:** Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

**Eye/face protection:** Wear chemical splash goggles or safety glasses with unperforated side shields during use. A face shield is recommended if splashing is anticipated during use.

**Hand protection:** Wear gloves recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

**Skin protection:** Wear protective clothing, if needed. Wear protective boots if the situation requires.

**Respiratory protection:** Always use an approved respirator when vapor/aerosols exceed permissible exposure limits. Where risk assessment shows air-purifying respirators are appropriate use a half-mask respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

**Environmental exposure controls:** Do not empty into drains.

*PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.*



## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Clear, colorless liquid
Odor	Mild ammonia odor
Odor Threshold	No data available
Molecular Weight	Not applicable
Chemical Formula	Not applicable
pH	6.8 - 7.5
Melting Point	-27 °C (-16.6 °F)
Boiling Point Range	107 °C (224.6 °F)
Evaporation Rate	No data available
Flammability (solid, gas)	Not applicable
Flash Point	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	No data available
Upper Explosive Limit (UEL)	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Density	No data available
Viscosity	No data available
Solubility in Water	Complete
Partition Coefficient (n-octanol/water)	No data available

**Oxidizing Properties**  
**Explosive Properties**  
**Volatiles by Weight @ 21 °C**

Not applicable  
Not applicable  
>67%

## 9.2 Other Data

No data available

## SECTION 10 - STABILITY AND REACTIVITY

### 10.1 Reactivity

This material is stable under normal handling conditions and use.

### 10.2 Chemical Stability

This material is stable under recommended storage and handling conditions.

### 10.3 Possibility of hazardous reactions

When water evaporates from this product residues may contain ammonium nitrate, and solid ammonium nitrate when sensitized during decomposition may become unstable and explosive. Hazardous polymerization will not occur.

### 10.4 Conditions to avoid

Temperature extremes and contact with incompatible materials.

### 10.5 Incompatible materials

Reducing agents, strong acids and bases, metal powders, combustible materials, chromates, zinc, copper and copper alloys, chlorates

### 10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon, nitrogen oxides, ammonia and amines.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute oral toxicity

Ammonium nitrate - LD<sub>50</sub>, rat: 2,950 mg/kg

Urea - LD<sub>50</sub>, rat: 14,300 mg/kg

#### Acute inhalation toxicity

No data available

#### Acute dermal toxicity

No data available

#### Skin irritation

May cause skin irritation.

#### Eye irritation

Causes eye irritation.

#### Sensitization

No data available

#### Carcinogenicity

No data available

#### Germ cell mutagenicity

No data available

#### Reproductive toxicity

No data available

#### Specific organ toxicity - single exposure

No data available

#### Specific organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

### 11.2 Further information

This product contains no substances present at levels greater than or equal to the 0.1% threshold (de minimis) that are identified as a probable, possible, potential or confirmed carcinogens by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12 - ECOLOGICAL INFORMATION

### 12.1 Toxicity

Large spills or discharges of this material may be harmful to aquatic life and the environment.

### 12.2 Persistence and degradability

This material is expected to be readily biodegradable.

### 12.3 Bioaccumulation potential

This substance is not expected to bioaccumulate.

### 12.4 Mobility in soil

The mobility of this substance in water is expected to be very high.

### 12.5 Results of PBT and vPvB assessment

This material is not considered to be persistent, bioaccumulative and toxic (PBT) and not very persistent and very bioaccumulative (vPvB).

### 12.6 Other effects

#### Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## SECTION 13 - DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should always comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**RCRA F-Series:** No listings above the reportable threshold (de minimis)

**RCRA U-Series:** No listings above the reportable threshold (de minimis)

## SECTION 14 - TRANSPORT INFORMATION

**Note:** Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

<b>USA DOT (Ground Transportation)</b>	NOT REGULATED FOR TRANSPORT (not dangerous goods)
<b>IMO/IMDG (Water Transportation)</b>	NOT REGULATED FOR TRANSPORT (not dangerous goods)
<b>ICAO/IATA (Air Transportation)</b>	NOT REGULATED FOR TRANSPORT (not dangerous goods)
<b>RID/ADR (Rail Transportation)</b>	NOT REGULATED FOR TRANSPORT (not dangerous goods)

## SECTION 15 - REGULATORY INFORMATION

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

#### U. S. Federal Regulations

**OSHA Hazard Communication Standard:** This material is classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

**OSHA Process Safety Management Standard:** This product is not regulated under OSHA PSM Standard 29 CFR 1910.119.

**EPA Risk Management Planning Standard:** This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

**EPA Federal Insecticide, Fungicide and Rodenticide Act:** This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.

**Toxic Substance Control Act (TSCA) Inventory:** All substances in this product are listed on the TSCA Inventory. This product is not subject to TSCA 12(b) Export Notification.

**Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b)) and 1310.4(f)(2)) and Chemical Code Number**  
No listings

**Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number:** No listings

#### Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals

Ammonium nitrate (CAS #6484-52-2), with more than 0.2 percent combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance.

#### Superfund Amendments and Reauthorization Act (SARA)

**SARA Section 311/312 Hazard Categories:** No data available

**SARA 313 Information:** None of the components of this product are subject to the reporting levels established by Section 313 of the Emergency

Planning and Community Right-to Know Act of 1986.

**SARA 302/304 Extremely Hazardous Substance:** None of the components of the product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

**SARA 302/304 Emergency Planning & Notification:** None of the components of the product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

**Comprehensive Response Compensation and Liability Act (CERCLA):** This product contains no CERCLA reportable substance.

#### Clean Air Act (CAA)

This product does not contain are Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

This product does not contain Class 1 Ozone depleters.

This product does not contain Class 2 Ozone depleters.

#### Clean Water Act (CWA)

This product does not contain Hazardous Substances.

This product does not contain Priority Pollutants.

This product does not contain Toxic Pollutants.

#### U.S. State Regulations

##### California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the state of California to cause cancer birth defects or reproductive harm in concentrations that exceed the threshold (de minimis) reporting levels established under Proposition 65.

##### Other U.S. State Inventories

*Ammonium Nitrate (CAS #6484-52-2)* is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/ Air Pollutants lists: DE, MA, NJ, PA, RI.

#### Canada

**WHMIS Hazard Classification:** No data available

**Canadian National Pollutant Release Inventory (NPRI):** None of the substances in this product are listed on the NPRI.

#### European Economic Community

**WGK, Germany (Water danger/protection):** 1 (slightly hazardous to water)

#### Global Chemical Inventory Lists

Country	Inventory Name	Listed
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (KECI)	Yes
Philippines	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes

\*Yes - All components of this product comply with the inventory requirements administered by the governing country.

No - One or more components of this product are not on the inventory or are exempt from listing.

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

## SECTION 16 - OTHER INFORMATION

#### Hazardous Material Information System (HMIS)

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

C = safety glasses, gloves & apron

#### HMIS Hazard Rating Legend

0 = Minimal 1 = Slight 2 = Moderate

3 = Serious 4 = Severe

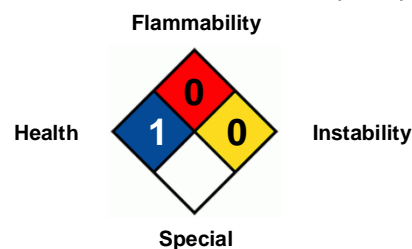
\* = Chronic Health Hazard

#### NFPA Hazard Rating Legend

0 = Insignificant 1 = Slight 2 = Moderate

3 = High 4 = Extreme

#### National Fire Protection Association (NFPA)



#### Full Text of GHS Hazard Phrases Referenced in Section 3 (not covered in Section 2)

H272 - May intensify fire; oxidizer

H319 - Causes serious eye irritation

#### Abbreviation Key

ACGIH American Conference of Governmental Industrial Hygienists

LD<sub>50</sub>

Lowest Lethal Dose

<b>ADR</b>	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)	<b>mppcf</b>	Millions of Particles Per Cubic Foot
<b>CAS</b>	Chemical Abstract Services	<b>NA</b>	North America
<b>CFR</b>	Code of Federal Regulations	<b>NAERG</b>	North American Emergency Response Guidebook
<b>COC</b>	Cleveland Open Cup	<b>NIOSH</b>	National Institute for Occupational Safety & Health
<b>DOT</b>	Department of Transportation	<b>NTP</b>	National Toxicology Program
<b>EC<sub>50</sub></b>	Half maximal effective concentration	<b>OSHA</b>	Occupational Safety and Health Administration
<b>EMS</b>	Emergency Response Procedures for Ships Carrying	<b>PBT</b>	Persistent, Bioaccumulating and Toxic
<b>EPA</b>	Environmental Protection Agency	<b>PEL</b>	Permissible exposure limit
<b>ErC<sub>50</sub></b>	Reduction of Growth Rate	<b>PMCC</b>	Pensky-Martens Closed Cup
<b>ERG</b>	Emergency Response Guidebook	<b>ppm</b>	Parts Per Million
<b>FDA</b>	Food and Drug Administration	<b>RCRA</b>	Resource Conservation and Recovery Act
<b>GHS</b>	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)	<b>RID</b>	Dangerous Goods by Rail
<b>HCS</b>	Hazard Communication Standard	<b>RQ</b>	Reportable Quantity
<b>IARC</b>	International Agency for Research on Cancer	<b>TCC/Tag</b>	Tagliabue Closed Cup
<b>IATA</b>	International Air Transport Association	<b>TLV</b>	Threshold Limit Value
<b>IC<sub>50</sub></b>	Half Maximal Inhibitory Concentration	<b>TSCA</b>	Toxic Substance Control Act
<b>ICAO</b>	International Civil Aviation Organization	<b>TWA</b>	Time-weighted Average
<b>IDLH</b>	Immediately Dangerous to Life and Health	<b>UN</b>	United Nations
<b>IMDG</b>	International Maritime Dangerous Goods	<b>VOC</b>	Volatile Organic Compounds
<b>IMO</b>	International Maritime Organization	<b>vPvB</b>	Very Persistent and Very Bioaccumulating
<b>LC<sub>50</sub></b>	50% Lethal Concentration	<b>WHMIS</b>	Workplace Hazardous Materials Information System
<b>LD<sub>50</sub></b>	50% Lethal Dose		

### DISCLAIMER OF RESPONSIBILITY

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their handling, and disposal of the product. Users also assume all risks in regard to the publication or use of, or reliance upon information contained herein. This information relates only to the product designated herein and does not relate to its use in combination with any other material or process.

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