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SAFETY DATA SHEET

Ammonium Nitrate Solution 90 - 96%

Section 1. Identification

Product identifier	:	Ammonium Nitrate Solution 90 - 96%
Product type	:	Liquid
Product code	:	PA08FL

Uses

Area of application	:	Industrial applications, Professional applications

Supplier

Supplier's details	:	Yara Pilbara Nitrates Pty Ltd

Address

Street	:	Eastpoint Plaza level 10, 233 Adelaide Terrace
Postal code	:	6000
City	:	Perth
Country	:	Australia
Telephone number	:	+61 8 9183 4000
Fax no.	:	+61 8 9185 6776
e-mail address of person responsible for this SDS	:	info.yara.pilbara@yara.com
Emergency telephone number (with hours of operation)	:	1800 117 506

Section 1. National advisory body/Poison Center

Name	:	Poisons Information Centre
Telephone number	:	131126
Hours of operation	:	24 hours, within Australia only

Section 2. Hazard(s) identification

Classification of the substance or mixture.	:	OXIDIZING LIQUIDS - Category 3 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms :

Signal word : WARNING

Hazard statements :

H272	May intensify fire; oxidizer.
H319	Causes serious eye irritation.

Precautionary statements

Prevention :

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P280-a	Wear eye protection.

Response :

P305	IF IN EYES:
P351	Rinse cautiously with water for several minutes.
P338	Remove contact lenses, if present and easy to do. Continue rinsing.
P337	If eye irritation persists:
P313	Get medical attention.
P370	In case of fire:
P378-b	Use flooding quantities of water to extinguish.

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information : Heated material can cause thermal burns.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	CAS number	% (w/w)
ammonium nitrate	6484-52-2	>= 80 - <= 90

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	:	Rinse with plenty of running water. Check for and remove any contact lenses. If irritation persists, get medical attention.
Inhalation	:	Avoid inhalation of vapor, spray or mist. If inhaled, remove to fresh air.
Skin contact	:	Heated material can cause thermal burns. Rinse with plenty of running water. Get medical attention immediately.
Ingestion	:	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	Causes serious eye irritation. Heated material can cause thermal burns.
Inhalation	:	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	:	Heated material can cause thermal burns.
Ingestion	:	Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact	:	Adverse symptoms may include the following: pain or irritation, watering, redness
Inhalation	:	No specific data.
Skin contact	:	No specific data.
Ingestion	:	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	:	No specific treatment.
Protection of first-aiders	:	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	None identified.
Specific hazards arising from the chemical	:	Oxidizing material. May intensify fire. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	:	Decomposition products may include the following materials: nitrogen oxides, ammonia, Avoid breathing dusts, vapors or fumes from burning materials., In case of inhalation of decomposition products in a fire, symptoms may be delayed.
Special protective actions for fire-fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Risk of explosion. If

large quantities are involved in a major fire, evacuate the area. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fight fire from protected location or maximum possible distance.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark : Non-explosive.

Hazchem or Emergency Action Code : 1Y

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. If spilled product is contaminated with incompatible material (see Section 10), carry out a risk assessment to identify appropriate methods and equipment specific to the situation and nature of the contaminants. Dilute with water and mop up if water-soluble. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. If spilled product is contaminated with incompatible material (see Section 10), carry out a risk assessment to identify appropriate methods and equipment specific to the situation and nature of the contaminants. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Do not absorb in sawdust or other combustible material.

It may lead to a fire risk when it dries out. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from clothing, incompatible materials and combustible materials. Keep away from heat. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Separate from reducing agents and combustible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Bund storage facilities to prevent soil and water pollution in the event of spillage.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits : None.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to

acceptable levels.

Individual protection measures

Hygiene measures : A washing facility or water for eye and skin cleaning purposes should be present. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. **Recommended:** Tightly-fitting goggles,

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasized that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : In case of inadequate ventilation wear respiratory protection.

Personal protective equipment (Pictograms) :

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid

Color : Colorless.,

Odor : Not determined.

Odor threshold : Not determined.

pH : 5 - 7 [Conc. (% w/w): 100 g/l]

Melting point/freezing point : 57 - 110 °C (135 - 230 °F)

Boiling point, initial boiling point, and boiling range : 128 - 160 °C (262 - 320 °F)

Flash point : Not applicable.

Evaporation rate	:	Not determined.
Flammability	:	Non-flammable.
Lower and upper explosion limit/flammability limit	:	**Lower:** Not determined. **Upper:** Not determined.
Vapor pressure	:	Not determined.
Relative density	:	> 1.38
Solubility(ies)	:	Not determined.
Partition coefficient: n-octanol/water	:	Not determined.
Auto-ignition temperature	:	Not determined.
Decomposition temperature	:	Not determined.
Viscosity	:	**Dynamic:** Not determined. **Kinematic:** Not determined.
Explosive properties	:	Non-explosive.
Oxidizing properties	:	Oxidizer

Particle characteristics

Median particle size	:	Not determined.

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following: contact with combustible materials Reactions may include the following: risk of causing or intensifying fire
Conditions to avoid	:	Drying on clothing or other combustible materials may cause fire.
Incompatible materials	:	Reactive or incompatible with the following materials:, alkalis, combustible materials, reducing materials, organic materials, Acids
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Method	Species	Result	Exposure

ammonium nitrate				
	OECD 401 LD50 Oral	Rat	2,950 mg/kg	Not applicable.
	OECD 402 LD50 Dermal	Rat	> 5,000 mg/kg	Not applicable.

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Product/ingredient name	Method	Species	Result	Exposure
ammonium nitrate				
	OECD 405 Eyes	Rabbit	Irritant	-

Conclusion/Summary

Skin : Heated material will cause thermal burns.

Eyes : Causes serious eye irritation. Heated material will cause thermal burns.

Respiratory : May be irritating to the respiratory system.

Sensitization

Product/ingredient name	Method	Species	Result
ammonium nitrate			
	OECD 429 Skin	Mouse	Not sensitizing

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Product/ingredient name	Method	Test detail	Result
ammonium nitrate			
	OECD 473	Mammalian Toxicity - Genotoxicity - In vitro Mammalian Chromosome Aberration Test or Mammalian Bone Marrow Chromosomal Abberation Test or Mammalian Erythrocyte Micronucleus Test In vitro	Negative
	OECD 471	Bacteria In vitro	Negative

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Product/ingredient name	Method	Species	Result	Exposure
ammonium nitrate				
	OECD 422 Oral	Rat	Fertility effects- Negative Developmental- Negative NOAEL > 1500 mg/kg bw/day	28 days

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

No known significant effects or critical hazards.

Specific target organ toxicity (repeated exposure)

No known significant effects or critical hazards.

Aspiration hazard

No known significant effects or critical hazards.

Information on the likely routes of exposure: : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation. Heated material can cause thermal burns.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Heated material can cause thermal burns.

Ingestion : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following: pain or irritation, watering, redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Method	Species	Result	Exposure
ammonium nitrate				
	OECD 422 Chronic NOAEL Oral	Rat	256 mg/kg	28 days
	OECD 412 Sub-acute NOEC Inhalation	Rat	> 185 mg/m³	2 weeks 5 hours per day

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Effects on or via lactation : No known significant effects or critical hazards.

Other effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following: pain or irritation, watering, redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral	Dermal	Inhalation (gases)	Inhalation (vapors)	Inhalation (dusts and mists)
Ammonium Nitrate Solution 90 - 96%	2,950 mg/kg	N/A	N/A	N/A	N/A
ammonium nitrate	2,950 mg/kg	N/A	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Method	Species	Result	Exposure
ammonium nitrate				
	Acute LC50 Fresh water	Fish	447 mg/l	48 h
	Acute EC50 Fresh water	Daphnia	490 mg/l	48 h
	Acute EC50 Salt water	Algae	1,700 mg/l	10 d

Conclusion/Summary : No known significant effects or critical hazards.

Persistence and degradability

Conclusion/Summary : No known significant effects or critical hazards.

Bioaccumulative potential

Conclusion/Summary : No known significant effects or critical hazards.

Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

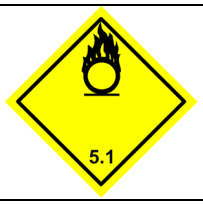
Regulation: ADG	
14.1 UN number	2426
14.2 UN proper shipping name	HOT AMMONIUM NITRATE, LIQUID
14.3 Transport hazard class(es)	5.1 
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information	

Hazchem or Emergency Action Code: 1Y

Regulation: ADR/RID	
14.1 UN number	2426
14.2 UN proper shipping name	HOT AMMONIUM NITRATE, LIQUID
14.3 Transport hazard class(es)	5.1 
14.4 Packing group	
14.5 Environmental hazards	No.
Additional information	
Hazard identification number	: 59
Tunnel code	: (E)
Hazchem or Emergency Action Code	: 1Y

Regulation: IMDG	
14.1 UN number	2426
14.2 UN proper shipping name	HOT AMMONIUM NITRATE, LIQUID
14.3 Transport hazard class(es)	5.1 
14.4 Packing group	
14.5 Environmental hazards	No.
Additional information	
Marine pollutant	: No.
IMDG Code Segregation group	: SG2
Emergency schedules (EmS)	: F-H, S-Q

Regulation: IATA	
14.1 UN number	2426
14.2 UN proper shipping name	HOT AMMONIUM NITRATE, LIQUID
14.3 Transport hazard class(es)	5.1

	
14.4 Packing group	
14.5 Environmental hazards	No.
Additional information **Marine pollutant** : No.	

14.6 Special precautions for user : Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

IMSBC : Not applicable.

Transport in bulk according to IMO instruments

Proper shipping name : Ammonium nitrate solution (93% or less)

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Inventory list

Philippines inventory (PICCS): All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Korea inventory: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI): All components are listed or exempted.
United States inventory (TSCA 8b): All components are listed or exempted.
EC INVENTORY (EINECS/ELINCS): All components are listed or exempted.
Canada: All components are listed or exempted.

Section 16. Any other relevant information

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
bw = Body weight
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From

Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
OXIDIZING LIQUIDS - Category 3	Expert judgment
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method

Key data sources : EU REACH ECHA/IUCLID5 CSR.

National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances.

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