

Material Safety Data Sheet

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Infosafe No™ 1CHLN

Issue Date : August 2022

RE-ISSUED by CHEMSUPP

Product Name Ammonium cerium (IV) nitrate

Classified as hazardous

Section 1 - Identification

Product Identifier	Ammonium cerium (IV) nitrate	
Company Name	CHEMSUPPLY AUSTRALIA PTY LTD (ABN 19 008 264 211)	
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
Telephone/Fax Number	Tel: (08) 8440-2000	
Emergency Phone Number	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)	
E-mail Address	www.chemsupply.com.au	
Recommended use of the chemical and restrictions on use	Analytical chemistry; oxidant for organic compounds; polymerisation catalyst for olefins; scavenger in the manufacture of azides; an important component of Chrome etchant, a material that is used in the production of LCDs; used in speciality glass and laboratory reagent.	
Other Names	Name Product Code	
Other Information	AMMONIUM CERIC NITRATE AMMONIUM CERIC NITRATE AR AA144 Ceric ammonium nitrate Ammonium hexanitratocerate(IV) Ammonium nitratocerate(IV) Cerium (IV) ammonium nitrate	
	ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.	

Section 2 - Hazard(s) Identification

GHS Classification of the Substance/Mixture Signal Word	Oxidizing Solids: Category 2 Acute Toxicity - Oral: Category 4 Skin Corrosion/Irritation: Category 1B DANGER
Hazard Statement (s)	H272 May intensify fire; oxidiser. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage.
Pictogram (s)	Flame over circle, Corrosion, Exclamation mark
Precautionary Statement – Prevention	P210 Keep away from heat/sparks/open flames/hot surfaces No smoking. P220 Keep/Store away from clothing//combustible materials. P221 Take any precaution to avoid mixing with combustibles. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face



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	protection.
Precautionary	P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel
Statement –	unwell.
Response	P330 Rinse mouth.
	P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
	P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
	P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a
	position comfortable for breathing.
	P310 Immediately call a POISON CENTER or doctor/physician.
	P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.
	Remove contact lenses, if present and easy to do. Continue rinsing.
	P370+P378 In case of fire: Use flooding quantities of water, dry powder or dry
	sand for extinction.
Precautionary	P405 Store locked up.
Statement – Storage	
Precautionary	P501 Dispose of contents/container according to local, state and federal
Statement – Disposal	regulations.

Section 3 - Composition and Information on Ingredients			
Ingredients	Name	CAS	Proportion
	AMMONIUM CERIUM (IV) NITRATE	16774-21-3	100 %
Section 4 - First A	Aid Measures		
Inhalation	Remove from exposure, : breathing has stopped, difficult, give oxygen	rest and keep warm. apply artificial r . Seek medical att	Avoid becoming a casualty. If espiration. If breathing is ention.
Ingestion	Rinse mouth thoroughly product have been removed advice.	with water immedia ved. DO NOT INDUCE	tely, repeat until all traces of VOMITING. Seek immediate medical
Skin	Wash affected areas wit contaminated clothing a medical advice.	th copious quantiti and wash before re-	es of water immediately. Remove use. If irritation occurs seek
Eye	Immediately irrigate w Eyelids to be held open	ith copious quantit n. Seek immediate	y of water for at least 15 minutes. medical assistance.
First Aid Facilities	Maintain eyewash founta	ain and drench faci	lities in work area.
Advice to Doctor	Treat symptomatically } the patient.	pased on judgement	of doctor and individual reactions of
Most important symptoms/effects, acute, delayed and	Irritant effects, coug coordination). Risk of	n, shortness of bre serious damage to	ath, ataxia (impaired locomotor the eyes.

Section 5 - Firefighting Measures

Hazards from Combustion Products	Toxic fumes in fire, nitrogen oxides (NOx), nitric oxides, ammonia (NH3), hydrogen chloride, ceric oxides and oxygen.
Specific Methods	Small fire: USE FLOODING QUANTITIES OF WATER. Do not use dry chemicals, CO2 or foam. If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat. Large fire: Flood fire area with water from a protected position. Cool containers with flooding quantities of water until well after fire is out - If impossible, withdraw from area and let fire burn. Avoid getting water inside containers: a violent reaction may occur. Dam fire control water for later disposal.

For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

aggravated medical

Other Information

conditions



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Product Name	Ammonium cerium (IV) nitrate
	Classified as hazardous
Specific Hazards Arising from the Chemical	Will accelerate burning when involved in a fire. May explode from heating, shock, friction or contamination. May will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, clothing, etc). Fire may produce irritating, poisonous, and/or corrosive gases. Containers may explode when heated. Runoff may create fire or explosion hazard.
Decomposition Temperature	> 175 °C.
Precautions in connection with Fire	Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.
Section 6 - Accide	ntal Release Measures
Spills & Disposal	Do not contaminate. Keep combustibles (wood, paper, clothing, oil, etc.) away from spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use water spray to knock down vapours or divert vapour clouds. Prevent entry into waterways, drains or confined areas. Prevent exposure to heat. Dry Spill Use clean non-sparking tools to transfer material to a clean, dry plastic container and cover loosely. Move container from spill area. Small Liquid Spill Use a non-combustible material like vermiculite, sand or earth to soak up the product and place in a loosely-covered container for later disposal. Large Liquid Spill SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
Personal Precautions	Use personal protective equipment. Ensure adequate ventilation. Avoid formation of dust. Avoid breathing dust, mist, vapours or gas. Evacuate personnel to safe areas.
Personal Protection	wear protective crothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Do not use rags, sawdust or other combustible absorbents to wipe up spilled material.
Environmental Precautions	Avoid release to the environment.

Section 7 - Handling and Storage

Precautions for Safe Handling	Avoid ingestion and inhalation of vapour or dust. Avoid contact with eyes, skin and clothing. Minimize dust generation and accumulation. Keep container tightly closed. Ensure good ventilation at the workplace. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Wear suitable protective clothing. Wash thoroughly after handling. Remove and wash all soiled and contaminated clothing promptly. Inform laundry personnel of contaminant's hazards. Keep away from foodstuffs, beverages and feed. Keep away from incompatibles such as reducing agents, combustible materials, organic materials, or any other readily oxidizable materials. Keep away from heat and all sources of ignition. No smoking. Product is an oxidizer. Fire or high temperatures may cause explosive decomposition if confined. Protect against physical damage. Do not store on wooden floors. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Conditions for safe storage, including any incompatibilities	Store in tightly closed containers, in a cool, dry, well-ventilated area away from incompatible materials. Keep well closed and protected from direct sunlight and moisture. Hygroscopic. Product is an oxidizer. Separate from acids, alkalies, reducing agents, flammable substances, organic, oxidizable or combustible materials, halogens, sulfides, metals, finely divided metals, alcohols, and permanganates. Do not store on wooden floors. Keep from heat and flame. Fire or high temperatures may cause explosive decomposition if confined. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.



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Infosafe No™	1CHLN Issue Date : August 2022 RE-ISSUED by CHEMSUPE	
Product Name	Ammonium cerium (IV) nitrate	
	Classified as hazardous	
Storage Regulations	Refer Australian Standard AS 4326-1995 'The storage and handling of oxidizing agents'.	
Storage Temperatures	Store at room temperature (15 to 25 °C recommended).	
Section 8 - Exposu	ure Controls and Personal Protection	
Other Exposure Information	A time weighted average (TWA) concentration for an 8 hour day, and 5 day week has not been established by Safe Work Australia for this product. There is a blanket limit of 10 mg/m ³ for dusts when limits have not otherwise been established.	
Engineering Controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.	
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.	
Eye and Face Protection	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.	
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.	
Personal Protective Equipment	Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.	

Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
Body Protection	Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Section 9 - Physical and Chemical Properties

Section 7 - 1 hysica	in and Chemical Properties
Form	Solid
Appearance	Small, monoclinic, yellow to orange-red crystals.
Odour	Slightly pungent, characteristic odour.
Melting Point	107-108 °C; 175 °C (decomposes).
Decomposition Temperature	> 175 °C.
Solubility in Water	Soluble (1410 g/l at 25 $^{\circ}$ C).
Solubility in Organic Solvents	Soluble in dilute acids.
Specific Gravity	2.49.
рН	1 (50 g/l, H2O).
Vapour Pressure	Negligible.
Evaporation Rate	Negligible.
Volatile Component	~10 Vol%



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Product Name	Ammonium cerium (IV) nitrate
	Classified as hazardous
Flammability	Strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.
Explosion Properties	May ignite, violently decompose, or explode from heating, shock, mechanical impact, friction or contamination. Contact with oxidizable substances may cause extremely violent combustion. May react explosively with hydrocarbons (fuels). Fire or high temperatures may cause explosive decomposition if confined.
Molecular Weight	548.23
Oxidising Properties	Strong oxidiser.
Other Information	Soluble in strong mineral acids.
Section 10 - Stabil	ity and Reactivity
Chemical Stability	Stable under ordinary conditions of use and storage, however, can decompose at temperatures above 85°C, and may violently decompose at temperatures above 175°C. Slightly hygroscopic.
Possibility of Hazardous Reactions	Slowly decomposes to ceric oxide at temperatures above 87 °C. Reacts with reducing agents. Reacts with flammable substances. Reactive with combustible materials, and organic materials.
Conditions to Avoid	Dust generation, temperatures above 85°C, heating in a confined space, shock, friction, and incompatibles materials.
Incompatible Materials	Reducing agents, easily oxidized materials, organic, combustible and flammable materials, alkalies, powdered aluminium, boron phosphide, cyanides, esters, phospham, phosphorus, sodium cyanide, sodium hypophosphite, stannous chloride, and thiocyanates.
Hazardous Decomposition Products	Toxic fumes in fire, nitrogen oxides (NOx), nitric oxides, ammonia (NH3), hydrogen chloride, ceric oxides and oxygen.
Hazardous Polymerization	Will not occur.
Section 11 - Toxico	ological Information

Acute Toxicity - Oral LD50 (rat): > 200-3200 mg/kg;

Ingestion	Harmful if swallowed. Ingestion may cause irritation or chemical burns to the gastrointestinal tract and nausea, vomiting, abdominal pain and diarrhoea (possibly bloody, from gastrointestinal haemorrhage). Symptoms may include dyspneea, constipation and ataxia. Cerium salts increase the blood coagulation rate. Exposure to cerium salts may increase sensitivity to heat, itching and skin lesions. Large doses may cause writhing, ataxia, labored respiration, sedation, hypotension and death by cardiovascular collapse. Small doses of nitrates may cause weakness, general depression, headache and mental impairment. Larger doses may cause dizziness, abdominal cramps, vomiting, bloody diarrhoea, and can lead to methaemoglobinaemia, characterized by dizziness, weakness, fatigue, convulsions (seizures), drowsiness, headache, shortness of breath, cyanosis (a bluish discoloration of the skin due to deficient oxygenation of the blood), rapid heart rate (tachycardia) or slow heart rate (bradycardia), hypotension, chocolate brown coloured blood, unconciousness, and death under some circumstances. Small doses of ammonium salts may cause drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, and haemolysis.
Inhalation	May be harmful if inhaled. Dusts may be irritating to the mucous membranes of the nasal passages and respiratory system and may cause burns to the mucous membranes. Symptoms may include coughing, and dyspnoea. Inhalation of high concentrations of ammonia vapours may cause shortness of breath, bronchospasm, chest pain and pulmonary oedema which may be fatal. After the uptake of very large quantities, may cause systemic effects such as, drop in blood pressure, methaemoglobinaemia, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, and haemolysis.
Skin	Causes irritation, with redness, itching, pain and possible chemical burns



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Product Name Ammonium cerium (IV) nitrate										
Classified as hazardous										
	with resultant tissue destruction. Exposure to cerium salts may increase sensitivity to heat, itching and skin lesions. May be harmful if absorbed through the skin.									
Eye	Causes eye irritation with redness, itching, stinging, blurring, tearing, severe pain and possible permanent corneal damage. Risk of serious damage to eyes.									
Serious Eye	Eye irritation test (rabbit): Severe irritation.									
Damage/Irritation										
Carcinogenicity	Nitrate or nitrite (ingested) under conditions that result in endogenous nitrosation are evaluated in the IARC Monographs (Vol. 94; in preparation) as Group 2A: Probably carcinogenic to humans.									
Reproductive Toxicity	Nitrates, nitrites & organic nitro compounds [resp/skin/oral]: human-reduced oxygen uptake causing oxygen debt, animal-testicular toxin, abortifacient.									
Chronic Effects	Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Under some circumstances, upon conversion of nitrate in the stomach to nitrite by bacteria, methemoglobinemia occurs, which is characterized by chocolate-brown coloured blood, headache, weakness, dizziness, breath shortness, irregular breathing, nausea, vomiting, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, convulsions, unconsciousness and possible death.									
Section 12 - Ecological Information										
Ecotoxicity	The following applies to nitrates in general: may contribute to the eutrophication of water supplies. Hazard for drinking water.									

Leotoxicity	eutrophication of water supplies. Hazard for drinking water.							
Persistence and	Methods for the determination of biodegradability are not applicable to							
Degradability	inorganic substances.							
Bioaccumulative	Not bioaccumulative.							
Potential								
Environmental	Do not allow to enter waters, waste water, or soil!							
Protection								
Acute Toxicity - Fish	The following applies to ammonium ions in general: toxic as from 0.3 mg/l. The following applies to nitrates in general: LC50 >500 mg/l.							
Acute Toxicity - Daphnia	Daphnia magna EC50: > 26 mg/1/48 h.							

Section 13 - Disposal Considerations

DisposalDispose of according to relevant local, state and federal governmentConsiderationsregulations.

Section 14 - Transport Information

Transport Information ADG UN Number	Dangerous Goods of Class 5.1 Oxidising Agents are incompatible in a placard load with any of the following: - Class 1, Class 2.1, Class 2.3, Class 3, Class 4, Class 5.2, Class 7, Class 8, Fire risk substances and combustible liquids. 1477
ADG Proper Shipping Name ADG Transport Hazard Class	NITRATES, INORGANIC, N.O.S. 5.1
ADG Packing Group	II
Hazchem Code	1[Z]
EPG Number	5A1
IERG Number	31



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Product Name Ammonium cerium (IV) nitrate										
		Cla	ssifie	d as haz	ardous					
Environmental Hazards	The following applies to nitrates in general: may contribute to the eutrophication of water supplies. Hazard for drinking water. The following applies to ammonium ions in general: Biological effects: Fish: Toxic as from 0.3 mg/l.									
Section 15 - Regul	atory Inform	ation								
Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS).									
Poisons Schedule	Not Scheduled									
Section 16 - Any C	Other Relevar	t Informatio	on							
Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals'. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand. Safe Work Australia, 'Hazardous Chemical Information System'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.									
Contact Person/Point	Paul McCar All informa representat since data and the com make no wat or accuracy accepts no may be obta for reliand representat	thy Ph. (08 ation provi tives is co safety st nditions of cranty eith y to the in responsibi ained by cu ce on infor- tives.) 8440 ded in mpiled andards handli er expr formati lity wh stomers mation	2000 D this data from the and gove ng and us essed or on contai atsoever from usi provided	ISCLAIMER STA sheet or by pest knowledge rnment regula e, or misuse, implied, with ned herein. Of for its accur ng the data a in this data	ATEMENT: our technical ge available to us. However, ations are subject to change , are beyond our control, we n respect to the completeness ChemSupply Australia Pty Ltd racy or for any results that and disclaims all liability sheet or by our technical				
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