

Chem-Impex International Inc.

Tel: (630) 766-2112
E-mail: sales@chemimpex.com
Shipping and Correspondence:
935 Dillon Drive
Wood Dale, IL 60191 USA

Fax: (630) 766-2218
Web site: www.chemimpex.com
Manufacturing site:
825 Dillon Drive
Wood Dale, IL 60191 USA

SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: 35290

NAME: Ammonium chloride

SYNONYMS:

24 HOUR EMERGENCY TELEPHONE: (800) 535-5053(USA)
352-323-3500 (INTERNATIONAL)

TO REQUEST AN MSDS: (800) 869-9290

CUSTOMER SERVICE: (630) 766-2112

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)
ACUTE TOXICITY, ORAL (CATEGORY 4), H302
EYE IRRITATION (CATEGORY 2A), H319
SHORT-TERM (ACUTE) AQUATIC HAZARD (CATEGORY 2), H401

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

SECTION 4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

GENERAL ADVICE	CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.MOVE OUT OF DANGEROUS AREA.
IF INHALED	IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN.
IN CASE OF SKIN CONTACT	WASH OFF WITH SOAP AND PLENTY OF WATER. CONSULT A PHYSICIAN.
IN CASE OF EYE CONTACT	RINSE THOROUGHLY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND CONSULT A PHYSICIAN.
IF SWALLOWED	NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT A PHYSICIAN.
MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED	THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11
INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED	NO DATA AVAILABLE

SECTION 5. FIRE AND EXPLOSION DATA

EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA	USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE.
SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE	NITROGEN OXIDES (NOX), HYDROGEN CHLORIDE GAS

**ADVICE FOR
FIREFIGHTERS**

WEAR SELF-CONTAINED BREATHING APPARATUS FOR
FIREFIGHTING IF NECESSARY.

FURTHER INFORMATION

NO DATA AVAILABLE

SECTION 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL
PRECAUTIONS,
PROTECTIVE
EQUIPMENT AND
EMERGENCY
PROCEDURES**

USE PERSONAL PROTECTIVE EQUIPMENT. AVOID
DUST FORMATION. AVOID BREATHING VAPOURS, MIST
OR GAS. ENSURE ADEQUATE VENTILATION. AVOID
BREATHING DUST.
FOR PERSONAL PROTECTION SEE SECTION 8.

**ENVIRONMENTAL
PRECAUTIONS**

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE
TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.
DISCHARGE INTO THE ENVIRONMENT MUST BE
AVOIDED.

**METHODS AND
MATERIALS FOR
CONTAINMENT AND
CLEANING UP**

PICK UP AND ARRANGE DISPOSAL WITHOUT
CREATING DUST. SWEEP UP AND SHOVEL. KEEP IN
SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

**REFERENCE TO OTHER
SECTIONS**

FOR DISPOSAL SEE SECTION 13.

SECTION 7. HANDLING AND STORAGE

**PRECAUTIONS FOR SAFE
HANDLING**

AVOID CONTACT WITH SKIN AND EYES. AVOID
FORMATION OF DUST AND AEROSOLS. FURTHER
PROCESSING OF SOLID MATERIALS MAY RESULT IN
THE FORMATION OF COMBUSTIBLE DUSTS. THE
POTENTIAL FOR COMBUSTIBLE DUST FORMATION
SHOULD BE TAKEN INTO CONSIDERATION BEFORE
ADDITIONAL PROCESSING OCCURS.
PROVIDE APPROPRIATE EXHAUST VENTILATION AT
PLACES WHERE DUST IS FORMED.
FOR PRECAUTIONS SEE SECTION 2.2.

**CONDITIONS FOR SAFE
STORAGE, INCLUDING
ANY INCOMPATIBILITIES**

KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND
WELL-VENTILATED PLACE.
HYGROSCOPIC. KEEP IN A DRY PLACE.

Store at RT

SPECIFIC END USE(S)

APART FROM THE USES MENTIONED IN SECTION 1.2
NO OTHER SPECIFIC USES ARE STIPULATED

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS**COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

COMPONENT	CAS-NO.	VALUE	CONTROL PARAMETERS	BASIS
Ammonium chloride	12125-02-9	TWA	10 MG/M3	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
	REMARKS	UPPER RESPIRATORY TRACT IRRITATION EYE IRRITATION		
		STEL	20 MG/M3	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
		UPPER RESPIRATORY TRACT IRRITATION EYE IRRITATION		
		TWA	10 MG/M3	USA. NIOSH RECOMMENDED EXPOSURE LIMITS
		ST	20 MG/M3	USA. NIOSH RECOMMENDED EXPOSURE LIMITS
		PEL	10 MG/M3	CALIFORNIA PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS
		STEL	20 MG/M3	CALIFORNIA PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS

EXPOSURE CONTROLS**APPROPRIATE ENGINEERING CONTROLS**

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE. WASH HANDS BEFORE BREAKS AND AT THE END OF WORKDAY.

PERSONAL PROTECTIVE EQUIPMENT**EYE/FACE PROTECTION**

SAFETY GLASSES WITH SIDE-SHIELDS CONFORMING TO EN166 USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU).

SKIN PROTECTION

HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD LABORATORY PRACTICES. WASH AND DRY HANDS.

FULL CONTACT

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.11 MM

BREAK THROUGH TIME: 480 MIN

MATERIAL TESTED:DERMATRIL (KCL 740, SIZE M)

SPLASH CONTACT

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.11 MM

BREAK THROUGH TIME: 480 MIN

MATERIAL TESTED:DERMATRIL (KCL 740, SIZE M)

IF USED IN SOLUTION, OR MIXED WITH OTHER SUBSTANCES, AND UNDER CONDITIONS WHICH DIFFER FROM EN 374, CONTACT THE SUPPLIER OF THE CE APPROVED GLOVES. THIS RECOMMENDATION IS ADVISORY ONLY AND MUST BE EVALUATED BY AN INDUSTRIAL HYGIENIST AND SAFETY OFFICER FAMILIAR WITH THE SPECIFIC SITUATION OF ANTICIPATED USE BY OUR CUSTOMERS. IT SHOULD NOT BE CONSTRUED AS OFFERING AN APPROVAL FOR ANY SPECIFIC USE SCENARIO.

BODY PROTECTION

COMPLETE SUIT PROTECTING AGAINST CHEMICALS, THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

RESPIRATORY PROTECTION

FOR NUISANCE EXPOSURES USE TYPE P95 (US) OR TYPE P1 (EU EN 143) PARTICLE RESPIRATOR.FOR HIGHER LEVEL PROTECTION USE TYPE OV/AG/P99 (US) OR TYPE ABEK-P2 (EU EN 143) RESPIRATOR CARTRIDGES. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

CONTROL OF ENVIRONMENTAL EXPOSURE

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	White to colorless crystalline powder
ODOUR	NO DATA AVAILABLE
ODOUR THRESHOLD	NO DATA AVAILABLE
PH	4.5 - 5.5 AT 50.00000 G/L AT 20.0 C
MELTING POINT/FREEZING POINT	335 °C (Approx.) (Sublimation Point)
INITIAL BOILING POINT AND BOILING RANGE	
FLASH POINT	
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	NO DATA AVAILABLE
VAPOUR PRESSURE	1.3 HPA AT 160.4 C
VAPOUR DENSITY	NO DATA AVAILABLE
RELATIVE DENSITY	1.53
WATER SOLUBILITY	SOLUBLE
PARTITION COEFFICIENT: N- OCTANOL/WATER	NO DATA AVAILABLE
AUTO-IGNITION TEMPERATURE	NO DATA AVAILABLE
DECOMPOSITION TEMPERATURE	NO DATA AVAILABLE
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NO DATA AVAILABLE
OXIDIZING PROPERTIES	NO DATA AVAILABLE

OTHER SAFETY INFORMATION

BULK DENSITY	500 KG/M3
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SECTION 10. STABILITY AND REACTIVITY

REACTIVITY	NO DATA AVAILABLE
CHEMICAL STABILITY	STABLE UNDER RECOMMENDED STORAGE CONDITIONS.
POSSIBILITY OF HAZARDOUS REACTIONS	NO DATA AVAILABLE
CONDITIONS TO AVOID	EXPOSURE TO MOISTURE MAY AFFECT PRODUCT QUALITY.

INCOMPATIBLE MATERIALS	STRONG ACIDS, STRONG BASES, STRONG OXIDIZING AGENTS
HAZARDOUS DECOMPOSITION PRODUCTS	OTHER DECOMPOSITION PRODUCTS - NO DATA AVAILABLE HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - NITROGEN OXIDES (NOX), HYDROGEN CHLORIDE GAS IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	LD50 ORAL - RAT - MALE AND FEMALE - 1,410 MG/KG (OECD TEST GUIDELINE 401) INHALATION: NO DATA AVAILABLE LD50 DERMAL - RAT - MALE AND FEMALE - > 2,000 MG/KG REMARKS: (ECHA) NO DATA AVAILABLE
SKIN CORROSION/IRRITATION	SKIN - RABBIT RESULT: NO SKIN IRRITATION - 24 H (DRAIZE TEST)
SERIOUS EYE DAMAGE/EYE IRRITATION	EYES - RABBIT RESULT: EYE IRRITATION REMARKS: (ECHA)
RESPIRATORY OR SKIN SENSITISATION	MAXIMISATION TEST - GUINEA PIG RESULT: NEGATIVE (OECD TEST GUIDELINE 406)
GERM CELL MUTAGENICITY	AMES TEST ESCHERICHIA COLI/SALMONELLA TYPHIMURIUM RESULT: NEGATIVE MUTAGENICITY (MAMMAL CELL TEST): CHROMOSOME ABERRATION. CHINESE HAMSTER LUNG CELLS RESULT: POSITIVE OECD TEST GUIDELINE 474 MOUSE - MALE - BONE MARROW RESULT: NEGATIVE
CARCINOGENICITY	

IARC: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED HUMAN CARCINOGEN BY IARC.

NTP: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY NTP.

OSHA: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS ON OSHA S LIST OF REGULATED CARCINOGENS.

REPRODUCTIVE TOXICITY NO DATA AVAILABLE

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE ACUTE ORAL TOXICITY - IRRITATIONS OF MUCOUS MEMBRANES IN THE MOUTH, PHARYNX, OESOPHAGUS AND GASTROINTESTINAL TRACT. ACUTE INHALATION TOXICITY - POSSIBLE DAMAGES: MUCOSAL IRRITATIONS

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE NO DATA AVAILABLE

ASPIRATION HAZARD NO DATA AVAILABLE

ADDITIONAL INFORMATION REPEATED DOSE TOXICITY - RAT - MALE AND FEMALE - ORAL - 90 D - NO OBSERVED ADVERSE EFFECT LEVEL - 1,695.7 MG/KG SUBCHRONIC TOXICITY RTECS: BP4550000

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

THE FOLLOWING APPLIES TO AMMONIUM SALTS IN GENERAL: AFTER SWALLOWING: LOCAL IRRITATION SYMPTOMS, NAUSEA, VOMITING, DIARRHOEA. SYSTEMIC EFFECT: AFTER THE UPTAKE OF VERY LARGE QANTITIES: DROP IN BLOOD PRESSURE, COLLAPSE, CNS DISORDERS, SPASMS, NARCOTIC CONDITIONS, RESPIRATORY PARALYSIS, HAEMOLYSIS. OTHER DANGEROUS PROPERTIES CAN NOT BE EXCLUDED. HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE.

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY

TOXICITY TO FISH	SEMI-STATIC TEST LC50 - CYPRINUS CARPIO (CARP) - 209.00 MG/L - 96 H REMARKS: (ECHA)
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES	STATIC TEST EC50 - DAPHNIA MAGNA (WATER FLEA) - 101 MG/L - 48 H REMARKS: (ECHA)
TOXICITY TO ALGAE	STATIC TEST ERC50 - CHLORELLA VULGARIS (FRESH WATER ALGAE) - 1,300 MG/L - 5 D REMARKS: (ECHA)
TOXICITY TO BACTERIA	STATIC TEST EC50 - ACTIVATED SLUDGE - 1,310 MG/L - 0.5 H (OECD TEST GUIDELINE 209)

PERSISTENCE AND DEGRADABILITY

THE METHODS FOR DETERMINING THE BIOLOGICAL DEGRADABILITY ARE NOT APPLICABLE TO INORGANIC SUBSTANCES.

BIOACCUMULATIVE POTENTIAL

NO DATA AVAILABLE

MOBILITY IN SOIL

NO DATA AVAILABLE

RESULTS OF PBT AND VPVB ASSESSMENT

PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL SAFETY ASSESSMENT NOT REQUIRED/NOT CONDUCTED

OTHER ADVERSE EFFECTS

AN ENVIRONMENTAL HAZARD CANNOT BE EXCLUDED IN THE EVENT OF UNPROFESSIONAL HANDLING OR DISPOSAL.
TOXIC TO AQUATIC LIFE.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS**PRODUCT**

OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY. CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.

CONTAMINATED PACKAGING

DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCES,
SOLID, N.O.S.(Ammonium chloride)
UN NUMBER: 3077
CLASS: 9
PACKING GROUP: III
REPORTABLE QUANTITY (RQ): 5000 LBS
POISON INHALATION HAZARD: NO

IMDG

NOT DANGEROUS GOODS

IATA

NOT DANGEROUS GOODS

SECTION 15. REGULATORY INFORMATION

SARA 302 COMPONENTS NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 302.

SARA 313 COMPONENTS THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DEMINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.

SARA 311/312 HAZARDS ACUTE HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT.

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

	CAS-NO.	REVISION DATE
Ammonium chloride	12125-02-9	04-01-1994

SECTION 16. OTHER INFORMATION

FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.

H302 HARMFUL IF SWALLOWED.
H319 CAUSES SERIOUS EYE IRRITATION.
H401 TOXIC TO AQUATIC LIFE

MSDS LEGEND

MW:	MOLECULAR WEIGHT
MF:	MOLECULAR FORMULA
VOC:	VOLATILE ORGANIC COMPOUNDS
ACGIH:	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGINISTS
CAS:	CHEMICAL ABSTRACTS SERIVE REGISTRY NUMBER
OSHA:	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL:	PERMISSIBLE EXPOSURE LIMIT (OSHA)
TLV:	THRESHOLD LIMIT VALUE (ACGIH)

IMPORTANT:

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