AMMONIUM REINECKATE

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

AMMONIUM REINECKATE

OTHER NAMES

$C_4H_{10}CrN_7S_4$ (printed C4-H10-Cr-N7-S4), NH4(Cr(NH3)2(SCN)4).H2O, "ammonium tetrathiocyanodiammonochromate", K[Cr(NH3)2(SCN)4], "ammonium tetrarhodanatodiamminechromate (III)","ammonium tetrathiocyanatodiamminechromate (III)"

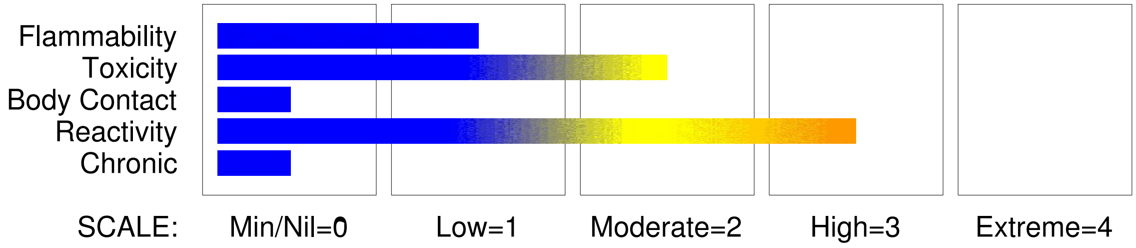
PRODUCT USE

Precipitant for primary and secondary amines, proline, hydroxyproline and certain amino acids. Used a colourimetric reagent for determination of mercury with which it precipitates to give a red colour.

SUPPLIER

Company: S D FINE- CHEM LIMITED
Address:
315- 317, T.V. INDUSTRIAL ESTATE,
248, WORLI,
MUMBAI- 400030.INDIA.
technical@sdfine.com
Telephone: 91- 22- 24959898
Telephone: 91- 22- 24959899
Fax: 91- 22- 24937232

HAZARD RATINGS



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Section 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HAZARD

Not hazardous
No hazards determined by using GHS criteria

PRECAUTIONARY STATEMENTS

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
ammonium reineckate	13573-16-5	>98
decomposes in aqueous solutions to		
hydrogen cyanide	74-90-8	

Section 4 - FIRST AID MEASURES

SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Ensure that there is ready access to cyanide antidote kits.

EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

Treat symptomatically.

- Signs symptoms of acute cyanide poisoning reflect cellular hypoxia and are often non

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-specific.
- Cyanosis may be a late finding.
- A bradycardic, hypertensive and tachypneic patient suggests poisoning especially if CNS and cardiovascular depression subsequently occurs.
- Immediate attention should be directed towards assisted ventilation, administration of 100% oxygen, insertion of intravenous lines and institution of cardiac monitoring.
- Obtain an arterial blood gas immediately and correct any severe metabolic acidosis (pH below 7.15).
- Mildly symptomatic patients generally require supportive care alone. Nitrites should not be given indiscriminately - in all cases of moderate to severe poisoning, they should be given in conjunction with thiosulfate. As a temporizing measure supply amyl nitrite perles (0.2ml inhaled 30 seconds every minute) until intravenous lines for sodium nitrite are established. 10 ml of a 3% solution is administered over 4 minutes to produce 20% methaemoglobin in adults. Follow directly with 50 ml of 25% sodium thiosulfate, at the same rate, IV. If symptoms reappear or persist within 1/2-1 hour, repeat nitrite and thiosulfate at 50% of initial dose. As the mode of action involves the metabolic conversion of the thiosulfate to thiocyanate, renal failure may enhance thiocyanate toxicity.
- Methylene blue is not an antidote. [Ellenhorn and Barceloux: Medical Toxicology]

If amyl nitrite intervention is employed then Medical Treatment Kits should contain the following:
- One box containing one dozen amyl nitrite ampoules
- Two sterile ampoules of sodium nitrite solution (10 mL of a 3% solution in each)
- Two sterile ampoules of sodium thiosulfate solution (50 mL of a 25% solution in each)
- One 10 mL sterile syringe. One 50 mL sterile syringe. Two sterile intravenous needles. One tourniquet.
- One dozen gauze pads.
- Latex gloves
- A "Biohazard" bag for disposal of bloody/contaminated equipment.
- A set of cyanide instructions on first aid and medical treatment.

- Notes on the use of amyl nitrite:-
- AN is highly volatile and flammable - do not smoke or use around a source of ignition.
- If treating patient in a windy or draughty area provide some shelter or protection (shirt, wall, drum, cupped hand etc.) to prevent amyl nitrite vapour from being blown away. Keep ampoule upwind from the nose, the objective is to get amyl nitrite into the patients lungs.
- Rescuers should avoid AN inhalation to avoid becoming dizzy and losing competence.
- Lay the patient down. Since AN dilates blood vessels and lowers blood pressure, lying down will help keep patient conscious.
- DO NOT overuse - excessive use might put the patient into shock. Experience at DuPont plants has not shown any serious after-effects from treatment with amyl nitrite.

ADDITIONAL NOTES:
- Major medical treatment procedures may vary e.g. US (FDA method as recommended by DuPont) uses amyl nitrite as a methaemoglobin generator, followed by treatment with sodium nitrite and then sodium thiosulfate.

MODES OF ACTION: Amyl nitrite (AN) reacts with haemoglobin (HB) to form about 5% methaemoglobin (MHB). Sodium nitrite ($NaNO_2$) reacts with haemoglobin to form approximately 20-30% methaemoglobin. Methaemoglobin attracts cyanide ions (CN) from tissue and binds with them to become cyanmethaemoglobin (CNMHB). Sodium thiosulfate ($Na_2S_2O_3$) converts cyanmethaemoglobin to thiocyanate (HSCN) which is excreted by the kidneys. i.e. AN + HB = MHB $NaNO_2$ + HB = MHB CN + MHB = CNMHB $Na_2S_2O_3$ + CNMHB + O_2 = HSCN
- The administration of the antidote salts is intravenous in normal saline, Ringers lactate or other available IV fluid.
- European practice may use 4-dimethylaminophenol (DMAP) as a methaemoglobin generator. Also hydroxycobalamin (Vitamin B12a) is used. Hydroxycobalamin works by reacting with

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cyanide to form cyanocobalamin (Vitamin B12) which is excreted in the urine.
· European and Australian NOHSC (Worksafe) propose dicobalt edetate (Kelocyanor) as antidote. This acts by chelating cyanide to form stable cobalticyanide, which is excreted in the urine. In all cases hyperbaric therapy may increase the efficiency of a cyanide antidote kit.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

· Water spray or fog.
· Foam.
· Dry chemical powder.
· BCF (where regulations permit).
· Carbon dioxide.

FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.
· Wear full body protective clothing with breathing apparatus.
· Prevent, by any means available, spillage from entering drains or water courses.
Use water delivered as a fine spray to control the fire and cool adjacent area.
DO NOT approach cylinders suspected to be hot.
If safe to do so, remove containers from path of fire.
Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

· Solid which exhibits difficult combustion or is difficult to ignite.
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
· Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
· Build-up of electrostatic charge may be prevented by bonding and grounding.
· Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
· All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.
Emits toxic fumes of cyanides if involved in fire.

FIRE INCOMPATIBILITY

Avoid reaction with oxidising agents.

Personal Protective Equipment

Chemical splash suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

continued...

MINOR SPILLS

Clean up all spills immediately.
Wear protective clothing, gloves, safety glasses and dust respirator.
Use dry clean up procedures and avoid generating dust.
Sweep up.
Place spilled material in clean, dry, sealable, labelled container.

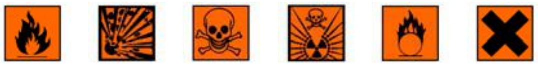
MAJOR SPILLS

Clear area of personnel and move upwind.
Alert Fire Brigade and tell them location and nature of hazard.

- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.

No smoking, naked lights or ignition sources. Increase ventilation.
Avoid generating dust.
Collect recoverable product into labelled containers for recycling.
Absorb remaining product with sand, earth or vermiculite.
Collect residues and seal in labelled drums for disposal.
Wash area down with large quantity of water and prevent runoff into drains.
After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
If contamination of drains or waterways occurs, advise emergency services.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



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+: May be stored together
O: May be stored together with specific preventions
X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Use good occupational work practice. Observe manufacturer's storing and handling recommendations.
Avoid all personal contact, including inhalation.
Avoid generating and breathing dust.
Wear protective clothing when risk of exposure occurs.
Avoid smoking, naked lights, heat or ignition sources.
Use in a well-ventilated area.
Avoid contact with incompatible materials.
Handle and open container with care.
When handling, DO NOT eat, drink or smoke.
Always wash hands with soap and water after handling. Work clothes should be laundered separately.

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SUITABLE CONTAINER

Packaging as recommended by manufacturer.
- Check that containers are clearly labelled.

Glass container.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.
Moisture sensitive. Keep under argon.
Keep containers tightly closed.

STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.
Store in original containers.
Keep containers securely sealed.
No smoking, naked lights, heat or ignition sources.
Store in a cool, dry place.
Store in a well-ventilated area.
DO NOT store near acids, or oxidising agents.
Keep storage area free of debris, waste and combustibles.
Protect containers against physical damage.
Check regularly for spills and leaks.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

• ammonium reineckate:	CAS:13573- 16- 5 CAS:13573- 17- 6 CAS:45151- 30- 2 CAS:15681- 88- 6 CAS:16985- 35- 6

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
hydrogen cyanide		50 [Unch]

ODOUR SAFETY FACTOR (OSF)

OSF=8.1 (HYDROGEN CYANIDE)

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted

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C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

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MATERIAL DATA

Because of the low toxicity of chromium metal and its divalent/ trivalent compounds the recommended TLV is thought to minimise the potential of pulmonary disease and other toxic effects. Some jurisdictions require that health surveillance be carried on workers occupationally exposed to inorganic chromium.

Such surveillance should emphasise

- demography, occupational and medical history and health advice
- physical examination with emphasis on the respiratory system and skin
- weekly skin inspection of hands and forearms by a "responsible person".

INGREDIENT DATA

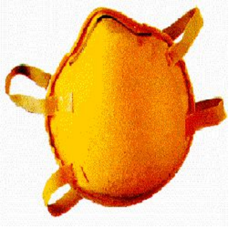
HYDROGEN CYANIDE:

Odour threshold: 0.2 - 5.0 ppm., recognition 2.0 - 5.0 ppm.

NOTE: Detector tubes for hydrocyanic acid, measuring in excess of 2 ppm, are commercially available. Long-term (8 hrs) measurements may be conducted to detect concentrations exceeding 1.3 ppm.

The recommended TLV-C is thought to provide protection against the significant risk of headache, fatigue, colic and nervousness observed in individuals exposed at 10 ppm in a full working shift. There are no rigorous studies which demonstrate objective signs of cyanide induced adverse health effects from long-term exposure to HCN in the workplace at concentrations equal to or less than 10 ppm. Although reports do exist which describe diverse and non-specific symptoms attributed to chronic exposures, other chemicals and stressors may also be implicated.

PERSONAL PROTECTION



EYE

- Chemical goggles.
- Safety glasses with side shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure,

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begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET
PVC gloves.
Rubber gloves.
Protective footwear.

OTHER
Overalls.
· Barrier cream.
· Eyewash unit.
Ensure there is ready access to a safety shower.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult your
Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25- 0.5 m/s (50- 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid	2.5- 10 m/s (500- 2000 f/min.)

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air motion).

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood - local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used. Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Red crystalline powder; mixes with water. Decomposes in aqueous solutions on prolonged standing with formation of hydrogen cyanide. Decomposes rapidly above 65 deg C. Hygroscopic. Usually in the monohydrate form.

PHYSICAL PROPERTIES

Solid.
Mixes with water.
Contact with acids liberates very toxic gas.

Molecular Weight: 336.41
Melting Range (℃): 268- 272(decomp)
Solubility in water (g/L): Miscible
pH (1% solution): Not available
Volatile Component (%vol): Not applicable.
Relative Vapour Density (air=1): Not applicable.
Lower Explosive Limit (%): Not applicable.
Autoignition Temp (℃): Not available.
State: Divided solid

Boiling Range (℃): Not available
Specific Gravity (water=1): Not available.
pH (as supplied): Not applicable
Vapour Pressure (kPa): Not applicable.
Evaporation Rate: Not applicable
Flash Point (℃): Not applicable
Upper Explosive Limit (%): Not applicable.
Decomposition Temp (℃): 268

log Kow: 0.35-1.07

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Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Presence of incompatible materials.
Hazardous polymerisation will not occur.
Metal compounds containing both coordinated ammonia, hydrazine, hydroxylamine or similar nitrogenous donors
BRETHERICK L.: Handbook of Reactive Chemical Hazards.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.
Considered an unlikely route of entry in commercial/industrial environments.

EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

SKIN

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.
The material is not thought to be a skin irritant (i.e. is unlikely to produce irritant dermatitis as described in EC Directives using animal models). Temporary discomfort, however, may result from prolonged dermal exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Toxic effects may result from skin absorption.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

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CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts.
Chromium(III) is considered an essential trace nutrient serving as a component of the "glucose tolerance factor" and a cofactor for insulin action. High concentrations of chromium are also found in RNA. Trivalent chromium is the most common form found in nature.

Chronic inhalation of trivalent chromium compounds produces irritation of the bronchus and lungs, dystrophic changes to the liver and kidney, pulmonary oedema, and adverse effects on macrophages. Intratracheal administration of chromium(III) oxide, in rats, increased the incidence of sarcomas, and tumors and reticulum cell sarcomas of the lung. There is inadequate evidence of carcinogenicity of chromium(III) compounds in experimental animals and humans (IARC).

Chronic exposure to hexavalent chromium compounds reportedly produces skin, eye and respiratory tract irritation, yellowing of the eyes and skin, allergic skin and respiratory reactions, diminished sense of smell and taste, blood disorders, liver and kidney damage, digestive disorders and lung damage. There is sufficient evidence of carcinogenicity of chromium(VI) compounds in experimental animals and humans to confirm these as Class 1 carcinogens (IARC).

Exposure to chromium during chrome production and in the chrome pigment industry is associated with cancer of the respiratory tract. A slight increase in gastrointestinal cancer following exposure to chromium compounds has also been reported. The greatest risk is attributed to exposure to acid-soluble, water-insoluble hexavalent chromium which occurs in roasting and refining processes. Animal studies support the idea that the most potent carcinogenic compounds are the slightly soluble hexavalent compounds. The cells are more active in the uptake of the hexavalent forms compared to trivalent forms and this may explain the difference in occupational effect. It is the trivalent form, however , which is metabolically active and binds with nucleic acid within the cell suggesting that chromium mutagenesis first requires biotransformation of the hexavalent form by reduction.

Hexavalent chromes produce chronic ulceration of skin surfaces (quite independent of other hypersensitivity reactions exhibited by the skin). Water-soluble chromium(VI) compounds come close to the top of any published "hit list" of contact allergens (eczematogens) producing positive results in 4 to 10% of tested individuals. On the other hand only chromium(III) compounds can bind to high molecular weight carriers such as proteins to form a complete allergen (such as a hapten). Chromium(VI) compounds cannot. It is assumed that reduction must take place for such compounds to manifest any contact sensitivity. The apparent contradiction that chromium(VI) salts cause allergies to chromium(III) compounds but that allergy to chromium(III) compounds is difficult to demonstrate is accounted for by the different solubilities and skin penetration of these compounds. Water-soluble chromium(VI) salts penetrate the horny layer of the skin more readily than chromium(III) compounds which are bound by cross-linking in the horny layer ("tanning", as for leather) and therefore do not reach the cells involved in antigen processing.
As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

TOXICITY AND IRRITATION

No significant acute toxicological data identified in literature search.

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HYDROGEN CYANIDE:

TOXICITY	IRRITATION
Oral (human) TDLo: 0.57 mg/kg	Nil Reported
Inhalation (man) LCLo: 400 mg/m³/2m	
Inhalation (human) TCLo: 500 mg/m³/3m	
Inhalation (human) TCLo: 200 mg/m³/10m	
Inhalation (human) TCLo: 120 mg/m³/1h	
Inhalation (rat) LC50: 484 ppm/5m	

Section 12 - ECOLOGICAL INFORMATION

No data for ammonium reineckate.
Refer to data for ingredients, which follows:

HYDROGEN CYANIDE:

Hazardous Air Pollutant:	Yes
Fish LC50 (96hr.) (mg/l):	5.3E- 06 -
Algae IC50 (72hr.) (mg/l):	1.8
log Pow (Verschueren 1983):	0.35/1.07

The material is classified as an ecotoxin* because the Fish LC50 (96 hours) is less than or equal to 0.1 mg/l

* Classification of Substances as Ecotoxic (Dangerous to the Environment)
Appendix 8, Table 1
Compiler's Guide for the Preparation of International Chemical Safety Cards: 1993
Commission of the European Communities.
Marine Pollutant
log Kow: 0.35-1.07
Toxicity invertebrate: cell mult. inhib. prtz 0.24mg/L

Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.
Consult manufacturer for recycling options.
Consult State Land Waste Management Authority for disposal.
Bury or incinerate residue at an approved site.
Decontaminate empty containers with water.
Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

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AMMONIUM REINECKATE

Section 15 - REGULATORY INFORMATION

REGULATIONS

No regulations applicable
No data available for ammonium reineckate as CAS: 13573-16-5, CAS: 13573-17-6, CAS: 45151-30-2, CAS: 15681-88-6, CAS: 16985-35-6.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
ammonium reineckate	13573- 16- 5, 13573- 17- 6, 45151- 30- 2, 15681-88- 6, 16985- 35- 6

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 12-May-2018