SAFETY DATA SHEET

Classified as hazardous in accordance with the criteria of EPA New Zealand

Section 1 - Identification

Product Identifier

Product Name	**Tetraammineplatinum(II) chloride hydrate**
CAS No	108374-32-9
Molecular Formula	Cl2 H12 N4 Pt . X H2 O
Molecular Weight	334.11
Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

Product Code	**437000000; 437000050; 437005000**
Address	Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand
Emergency Tel.	**CHEMTREC®** **09 980 6780 or +64 9 980 6780**
Telephone / Fax Numbers	Tel: 09 980 6700 Fax: 09 980 6788
E-mail address	ANZinfo@thermofisher.com

Section 2 - Hazard(s) Identification

Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

GHS Classification

Physical hazards
Based on available data, the classification criteria are not met

Health hazards

Acute Oral Toxicity	Category 4
Acute Dermal Toxicity	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity - (single exposure)	Category 3

Environmental hazards
Based on available data, the classification criteria are not met

Label Elements

Signal Word **Warning**

Hazard Statements
H319 - Causes serious eye irritation
H315 - Causes skin irritation
H335 - May cause respiratory irritation
H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled

Precautionary Statements
Prevention
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
Response
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth
P362 + P364 - Take off contaminated clothing and wash it before reuse
Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Tetraammineplatinum(II) chloride hydrate	108374-32-9	>95
Tetraamminedichloroplatinum(II)	13933-32-9	-

Section 4 - First Aid Measures

Description of first aid measures

General Advice If symptoms persist, call a physician.

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Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Ingestion	Do NOT induce vomiting. Get medical attention.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
First Aid Facilities	Eyewash, safety shower and washroom.
Most important symptoms and effects	None reasonably foreseeable.
Notes to Physician	Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons
No information available.

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products
Nitrogen oxides (NOx), Platinum oxide, Hydrogen chloride gas.

Special protective equipment and precautions for fire fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Emergency procedures
Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

Environmental Precautions
Should not be released into the environment. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Precautions to prevent secondary hazards
Clean contaminated objects and areas thoroughly observing environmental regulations

Reference to Other Sections
Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling

Advice on safe handling
Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions
Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials
Strong oxidizing agents.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

Section 8 - Exposure Controls and Personal Protection

Control parameters

Exposure limits
AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]
Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia
ACGIH - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.
UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

Component	New Zealand WEL	Australia	ACGIH TLV	The United Kingdom
Tetraamminedichloroplatinum(II)		TWA: 0.002 mg/m^3	TWA: 0.002 mg/m^3	STEL: 0.006 mg/m^3 15 min TWA: 0.002 mg/m^3 8 hr

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures
Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Individual protection measures, such as personal protective equipment

Eye Protection — Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection — Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Natural rubber, Nitrile rubber, Neoprene, PVC.	See manufacturers recommendations	-	AS/NZS 2161	(minimum requirement)

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection	Long sleeved clothing
Repiratory Protection	Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of repiratory protective devices
Recommended Filter type:	Particulates filter conforming to EN 143 (or AUS/NZ equivalent)
Recommended half mask:-	Particle filtering: EN149:2001 (or AUS/NZ equivalent) When RPE is used a face piece Fit Test should be conducted
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	No information available.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State	Solid	
Appearance		
Odor	No information available	
Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Flash Point	No information available	**Method -** No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	Not applicable	Solid
Water Solubility	No information available	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Vapor Pressure	No data available	
Density / Specific Gravity	No data available	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	

Other information

Molecular Formula	Cl2 H12 N4 Pt . X H2 O
Molecular Weight	334.11
Evaporation Rate	Not applicable - Solid

Section 10 - Stability and Reactivity

Reactivity	None known, based on information available
Stability	Hygroscopic.

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

Conditions to Avoid Incompatible products, Excess heat, Avoid dust formation, Exposure to moist air or water.

Incompatible Materials Strong oxidizing agents.

Hazardous Decomposition Products Nitrogen oxides (NOx). Platinum oxide. Hydrogen chloride gas.

Section 11 - Toxicological Information

Acute Effects

Information on likely routes of exposure

Product Information

Inhalation Irritating to respiratory system. May be harmful if inhaled.
Eyes Irritating to eyes.
Skin Irritating to skin. May be harmful in contact with skin.
Ingestion May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Numerical measures of toxicity

(a) acute toxicity;
Oral Category 4
Dermal Category 4
Inhalation Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Tetraamminedichloroplatinum(II)		LD50 > 2000 mg/kg (Rat)	

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; Category 3

Results / Target organs	Respiratory system
(i) STOT-repeated exposure;	No data available
Target Organs	No information available.
(j) aspiration hazard;	Not applicable Solid
Other Adverse Effects	The toxicological properties have not been fully investigated.

Symptoms / effects,both acute and delayed
No information available.

Section 12 - Ecological Information

Ecotoxicity

Aquatic ecotoxicity	May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.
Terrestrial ecotoxicity	There is no data for this product
Persistence and Degradability	Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary
Persistence	May persist.
Degradability	Not relevant for inorganic substances.
Degradation in sewage treatment plant	Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.
Bioaccumulative Potential	Product has a high potential to bioconcentrate
Mobility	No information available.

Other adverse effects

Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste treatment methods

Waste from Residues/Unused Products	Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point.

Other Information	Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

Section 14 - Transport Information

NZS 5433:2020	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated
Environmental hazards	No hazards identified
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable, packaged goods
Special Precautions	No special precautions required. Please refer to the applicable dangerous goods regulations for additional information.
Additional information	None known

Section 15 - Regulatory Information

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

National Regulations
There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

Certified handlers, tracking and controlled substance license requirements
Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

Prohibition or notification/licensing requirements
Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

International Regulations

Ozone Depletion Potential	This product does not contain any known or suspected substance
Persistent Organic Pollutant	This product does not contain any known or suspected substance
Rotterdam Convention (PIC)	Not applicable
Authorisation/Restrictions according to EU REACH	Not applicable

International Inventories

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	NZIoC	AICS	EINECS	ELINCS	NLP	KECL	IECSC	TCSI
Tetraammineplatinum(II) chloride hydrate	108374-32-9	-	-	-	-	-	-	-	X
Tetraamminedichloroplatinum(II)	13933-32-9	-	-	237-706-5	-	-	KE-33231	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	PICCS	ISHL	ENCS
Tetraammineplatinum(II) chloride hydrate	108374-32-9	-	-	-	-	-	-	-
Tetraamminedichloroplatinum(II)	13933-32-9	X	ACTIVE	-	X	-	X	-

Legend: X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Section 16 - Other Information

This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

Legend

NZIoC - New Zealand Inventory of Chemicals
AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
CAS - Chemical Abstracts Service
TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
NZS 5433:2020 - Transport of Dangerous Goods on Land
OECD - Organisation for Economic Co-operation and Development
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
MARPOL - International Convention for the Prevention of Pollution from Ships
ADG - Australian Code for the Transport of Dangerous Goods by Road and Rail
LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%
EC50 - Effective Concentration 50%
ATE - Acute Toxicity Estimate
WEL - Workplace Exposure Limit
RPE - Respiratory Protective Equipment
DNEL - Derived No Effect Level
NOEC - No Observed Effect Concentration
POW - Partition coefficient Octanol:Water
BCF - Bioconcentration factor
vPvB - very Persistent, very Bioaccumulative
PBT - Persistent, Bioaccumulative, Toxic
VOC - (Volatile Organic Compound)

Key literature references and sources for data
HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS
EPA Guide to classifying hazardous substances in New Zealand
EPA - Assigning a product to an existing HSNO approval guide

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

Revision Date 10-Mar-2023
Revision Summary Not applicable

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet