SAFETY DATA SHEET

Section 1 - Identification

Product Name **Gold nanoparticles, 5nm, supplied in 0.1mM PBS**

Product Code	**J67448**
Address	ThermoFisher Scientific Australia Pty Ltd 5 Caribbean Drive, Scoresby VICTORIA 3179, Australia
Emergency Tel.	**CHEMTREC®** **03 9757 4559 or +613 9757 4559**
Telephone / Fax Numbers	Tel: 1300 735 292 Fax: 1800 067 639
E-mail address	ANZinfo@thermofisher.com

Recommended Use Laboratory chemicals.

Uses advised against This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Section 2 - Hazard(s) Identification

Classification under Safe Work Australia

Classified as not hazardous according to criteria of Safe Work Australia.

Physical hazards
No hazards identified

Health hazards
No hazards identified

Environmental hazards
No hazards identified

Label Elements None required

Other information

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Water	7732-18-5	99.9804
Sodium chloride	7647-14-5	0.008
Sodium phosphate dibasic	7558-79-4	0.0011
Dihydrogen potassium phosphate	7778-77-0	0.0003
Potassium chloride	7447-40-7	0.0002

Section 4 - First Aid Measures

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Self-Protection of the First Aider No special precautions required.

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
Not combustible.

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

Hazardous Decomposition Products
Hydrogen chloride, Oxides of phosphorus, Potassium oxides, Sodium oxides, Gold oxide.

Specific Hazards Arising from the Chemical
None reasonably foreseeable.

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

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

Environmental Precautions
Should not be released into the environment. See Section 12 for additional Ecological Information. 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

Clean-up methods - small spillage
Sweep up and shovel into suitable containers for disposal.

Clean-up methods - large spillage
Not applicable, packaged goods.

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

Section 7 - Handling and Storage

Precautions for Safe Handling
Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

Conditions for Safe Storage, Including any Incompatibilities
Keep refrigerated.

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

Section 8 - Exposure Controls and Personal Protection

Exposure limits
The product does not contain any hazardous materials with occupational exposure limits established.

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

Exposure Controls
Engineering Measures
None under normal use conditions.

Personal protective equipment

Eye Protection — Wear safety glasses with side shields (or 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:	Particle filter (or AUS/NZ equivalent)
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

Appearance		
Physical State	Liquid	
Odor	Odorless	
Odor Threshold	No data available	
pH	5 - 7	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flash Point	No information available	**Method -** No information available
Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Vapor Pressure	23 hPa @ 20 °C	
Vapor Density	No data available	(Air = 1.0)
Specific Gravity / Density	No data available	
Bulk Density	Not applicable	Liquid
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	No data available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Other information

Section 10 - Stability and Reactivity

Reactivity	None known, based on information available
Stability	Light sensitive.
Conditions to Avoid	Heat, flames and sparks.
Incompatible Materials	None known.
Hazardous Decomposition Products	Hydrogen chloride. Oxides of phosphorus. Potassium oxides. Sodium oxides. Gold oxide.
Hazardous Polymerization	No information available.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral Based on available data, the classification criteria are not met
Dermal No data available
Inhalation No data available

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Sodium chloride	LD50 = 3 g/kg (Rat)	LD50 > 10000 mg/kg (Rabbit)	LC50 > 42 mg/L (Rat) 1 h
Sodium phosphate dibasic	LD50 = 17 g/kg (Rat)		
Dihydrogen potassium phosphate	LD50 = 3200 mg/kg (Rat)	LD50 > 4640 mg/kg (Rabbit)	LC50 > 0.83 mg/L (Rat) 4 h
Potassium chloride	LD50 = 2600 mg/kg (Rat)		

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(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; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

Symptoms / effects,both acute and delayed No information available

Section 12 - Ecological Information

Ecotoxicity effects May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Sodium chloride	Pimephals prome: LC50: 7650 mg/L/96h	EC50: 1000 mg/L/48h		
Potassium chloride	Lepomis macrochirus:	EC50: 825 mg/L/48h	EC50: 2500 mg/L/72h	

	LC50: 1060 mg/L /96h Pimephales promelas: LC50: 750 - 1020 mg/L /96h			

Persistence and Degradability	Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary
Persistence	based on information available, May persist.
Degradation in sewage treatment plant	Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.
Bioaccumulative Potential	May have some potential to bioaccumulate
Mobility	The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility Highly mobile in soils
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 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	Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.
Other Information	Chemical wastes should be disposed through a licensed commercial waste collection service.

Section 14 - Transport Information

IMDG/IMO	Not regulated
ADG	Not regulated
IATA	Not regulated
Environmental hazards	No hazards identified
Special Precautions	No special precautions required
Additional information	None known

Section 15 - Regulatory Information

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

National Regulations **Australia**

See section 8 for national exposure control parameters.

Standard for the Uniform Scheduling of Medicines and Poisons

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons.

Component	Standard for the Uniform Scheduling of Medicines and Poisons
Sodium phosphate dibasic - 7558-79-4	Schedule 5 listed - being the carbonate, silicate or phosphate salts of sodium or potassium alone or in any combination: in solid orthodontic device cleaning preparations, the pH of which as an in-use aqueous solution is >11.5, in solid automatic dishwashing preparations, the pH of which in a 500 g/L aqueous solution or mixture is >11.5 but <=12.5;in other solid preparations, the pH of which in a 10 g/L aqueous solution is >11.5, or in liquid or semi-solid preparations, the pH of which is >11.5, unless: in food additive preparations for domestic use, or in automatic dish washing preparations for domestic use with a pH >12.5;except when separately specified in these Schedules Schedule 5 listed - being the Carbonate, Silicate or Phosphate salts of Sodium or Potassium alone or in any combination: in solid orthodontic device cleaning preparations as an in-use aqueous solution;in solid automatic dishwashing preparations in a 500 g/L aqueous solution or mixture but with pH <=12.5;in other solid preparations in a 10 g/L aqueous solution, or in liquid or semi-solid preparations, unless in food additive preparations for domestic use, or in automatic dish washing preparations for domestic use with a pH >12.5;except when separately specified in these Schedules Schedule 6 listed - being the carbonate, silicate or phosphate salts of sodium or potassium alone or in any combination for non-domestic use: in solid automatic dishwashing preparations, the pH of which in a 500 g/L aqueous solution or mixture is >12.5, or in liquid or semi-solid automatic dishwashing preparations, the pH of which is >12.5 Schedule 10 listed
Dihydrogen potassium phosphate - 7778-77-0	Schedule 10 listed
Potassium chloride - 7447-40-7	Schedule 4 listed - in oral preparations for human therapeutic use except: a) when containing <=550 mg of Potassium chloride per dosage unit, b) in preparations for oral rehydration therapy, c) in preparations for oral use for bowel cleansing prior to diagnostic medical and surgical procedures, or d) in preparations for enteral feeding

Australian Industrial Chemicals Introduction Scheme (AICIS)

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Water - 7732-18-5	Present	-
Sodium chloride - 7647-14-5	Present	-
Sodium phosphate dibasic - 7558-79-4	Present	-
Dihydrogen potassium phosphate - 7778-77-0	Present	-
Potassium chloride - 7447-40-7	Present	-

Australian - Illicit Drug Precursors/Reagents Substance List
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

Chemicals of Security Concern
This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

National pollutant inventory Not applicable

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

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

International Inventories

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Water	X	X	231-791-2	-	X	X	-	X	X		X	KE-35400
Sodium chloride	X	X	231-598-3	-	X	X	-	X	X	X	X	KE-31387
Sodium phosphate	X	X	231-448-7	-	X	X	-	X	X	X	X	KE-12344

dibasic												
Dihydrogen potassium phosphate	X	X	231-913-4	-	X	X	-	X	X	X	X	KE-28622
Potassium chloride	X	X	231-211-8	-	X	X	-	X	X	X	X	KE-29086

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

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

Basel convention on the control of transboundary movements of hazardous wastes and their dispoal
Not applicable.

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Sodium chloride	7647-14-5	Listed	Not applicable	Not applicable	Not applicable
Sodium phosphate dibasic	7558-79-4	Listed	Not applicable	Not applicable	Not applicable
Dihydrogen potassium phosphate	7778-77-0	Listed	Not applicable	Not applicable	Not applicable
Potassium chloride	7447-40-7	Listed	Not applicable	Not applicable	Not applicable

Authorisation/Restrictions according to EU REACH

https://echa.europa.eu/substances-restricted-under-reach

Section 16 - Other Information

Legend

AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - Chinese Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
NZS 5433:2012 - Transport of Dangerous Goods on Land
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
WEL - Workplace Exposure Limit
NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
CAS - Chemical Abstracts Service
ACGIH - American Conference of Governmental Industrial Hygienists Predicted No Effect Concentration (PNEC)
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
ADG Australian Code for the Transport of Dangerous Goods by Road and Rail
OECD - Organisation for Economic Co-operation and Development
LC50 - Lethal Concentration 50%
ATE - Acute Toxicity Estimate
RPE - Respiratory Protective Equipment

DNEL - Derived No Effect Level
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative
VOC - (Volatile Organic Compound)

NOEC - No Observed Effect Concentration
BCF - Bioconcentration factor
PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation method

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Revision Date	19-Nov-2022
Revision Summary	Not applicable.

This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).

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