

SAFETY DATA SHEET

Revision Date 01-Apr-2024

Revision Number 4

1. Identification

Product Name Palladium nitrate & Magnesium nitrate, Matrix Modifier Solution, Specpure®

Cat No. : 45290

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals	Category 1
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2

Label Elements

Signal Word

Warning

Hazard Statements

May be corrosive to metals
Causes skin irritation
Causes serious eye irritation



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Skin

IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Spills

Absorb spillage to prevent material damage

Storage

Store in corrosive resistant polypropylene container with a resistant inliner

Hazards not otherwise classified (HNOC)

None identified

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Water	7732-18-5	97.78
Nitric acid ...% [C ≤ 70 %]	7697-37-2	2.0
Palladium dinitrate	10102-05-3	0.16
Magnesium nitrate, dihydrate	15750-45-5	0.06

4. First-aid measures

General Advice

If symptoms persist, call a physician.

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.

Inhalation

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

Ingestion

Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects

None reasonably foreseeable. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Notes to Physician

Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Not combustible. CO₂, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature No information available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. None reasonably foreseeable.

Hazardous Combustion Products

Nitrogen oxides (NO_x). Magnesium oxides. Palladium oxide.

Protective Equipment and Precautions for Firefighters

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

NFPA

Health
3

Flammability
0

Instability
0

Physical hazards
-

6. Accidental release measures

Personal Precautions 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 Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

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

Storage. Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong bases. Oxidizing agent.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Nitric acid ...% [C ≤ 70 %]	TWA: 2 ppm STEL: 4 ppm	(Vacated) TWA: 2 ppm (Vacated) TWA: 5 mg/m ³ (Vacated) STEL: 4 ppm (Vacated) STEL: 10 mg/m ³ TWA: 2 ppm TWA: 5 mg/m ³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³	TWA: 2 ppm STEL: 4 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Multi-purpose/ABEK. conforming to EN14387. Particulates filter conforming to EN 143.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	No information available
Odor	Odorless
Odor Threshold	No information available
pH	2
Melting Point/Range	No data available
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	23 hPa @ 20 °C
Vapor Density	No information available
Specific Gravity	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	0.075% Pd & 0.05% Mg(NO ₃) ₂ in 2% HN O ₃

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong bases, Oxidizing agent

Hazardous Decomposition Products Nitrogen oxides (NOx), Magnesium oxides, Palladium oxide

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Nitric acid ...% [C ≤ 70 %]	Not listed	Not listed	LC50 = 2500 ppm. (Rat) 1h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Nitric acid ...% [C ≤ 70 %]	7697-37-2	Not listed	Not listed	Not listed	Not listed	Not listed
Palladium dinitrate	10102-05-3	Not listed	Not listed	Not listed	Not listed	Not listed
Magnesium nitrate, dihydrate	15750-45-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

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

Persistence and Degradability based on information available. May persist

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Nitric acid ...% [C ≤ 70 %]	-2.3

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3264
Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s.
Technical Name (NITRIC ACID)
Hazard Class 8
Packing Group III

TDG

UN-No UN3264
Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class 8
Packing Group III

IATA

UN-No UN3264
Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class 8
Packing Group III

IMDG/IMO

UN-No UN3264
Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class 8
Packing Group III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Water	7732-18-5	X	ACTIVE	-
Nitric acid ...% [C ≤ 70 %]	7697-37-2	X	ACTIVE	-
Palladium dinitrate	10102-05-3	X	ACTIVE	-
Magnesium nitrate, dihydrate	15750-45-5	-	-	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical
Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

TSCA 12(b) - Notices of Export

Not applicable

International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Water	7732-18-5	X	-	231-791-2	X	X		X	X	KE-35400
Nitric acid ...% [C ≤ 70 %]	7697-37-2	X	-	231-714-2	X	X	X	X	X	KE-25911
Palladium dinitrate	10102-05-3	X	-	233-265-8	-	X	X	-	X	KE-27754
Magnesium nitrate, dihydrate	15750-45-5	-	-	-	-	-		-	-	-

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting thresholds
Nitric acid ...% [C ≤ 70 %]	7697-37-2	2.0	1.0 %	-
Magnesium nitrate, dihydrate	15750-45-5	0.06	1.0 %	-

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Nitric acid ...% [C ≤ 70 %]	X	1000 lb	-	-

Clean Air Act

Not applicable

OSHA - Occupational Safety and Health Administration

Not applicable

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Nitric acid ...% [C ≤ 70 %]	-	TQ: 500 lb

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Nitric acid ...% [C ≤ 70 %]	1000 lb	1000 lb	1000 lb 454 kg

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
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Water	-	-	X	-	-
Nitric acid ...% [C ≤ 70 %]	X	X	X	X	X
Palladium dinitrate	-	X	-	X	-
Magnesium nitrate, dihydrate	-	X	-	X	-

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:

Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

Component	DHS Chemical Facility Anti-Terrorism Standard
Nitric acid ...% [C ≤ 70 %]	Release STQs - 15000lb Theft STQs - 400lb

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Water	7732-18-5	-	-	-
Nitric acid ...% [C ≤ 70 %]	7697-37-2	-	Use restricted. See item 75. (see link for restriction details)	-
Palladium dinitrate	10102-05-3	-	-	-
Magnesium nitrate, dihydrate	15750-45-5	-	-	-

REACH links

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

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Nitric acid ...% [C ≤ 70 %]	7697-37-2	Listed	Not applicable	Not applicable	Not applicable
Palladium dinitrate	10102-05-3	Not applicable	Not applicable	Not applicable	Not applicable
Magnesium nitrate, dihydrate	15750-45-5	Not applicable	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive	Seveso III Directive	Rotterdam	Basel Convention
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		(2012/18/EC) - Qualifying Quantities for Major Accident Notification	(2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Convention (PIC)	(Hazardous Waste)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Nitric acid ...% [C ≤ 70 %]	7697-37-2	Not applicable	Not applicable	Not applicable	Annex I - Y34
Palladium dinitrate	10102-05-3	Not applicable	Not applicable	Not applicable	Not applicable
Magnesium nitrate, dihydrate	15750-45-5	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By Health, Safety and Environmental Department
Email: chem.techinfo@thermofisher.com
www.thermofisher.com

Revision Date 01-Apr-2024
Print Date 01-Apr-2024
Revision Summary New emergency telephone response service provider.

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 SDS