

ALFAA13855

## Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**产品说明:**  
**Product Description:** 钇,等离子标准溶液  
 Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

**Cat No. :** 13855  
**Molecular Formula** Y2 O3 in 5% HN O3

**Supplier** Avocado Research Chemicals Ltd.  
 (Part of Thermo Fisher Scientific)  
 Shore Road, Heysham  
 Lancashire, LA3 2XY,  
 United Kingdom  
 Office Tel: +44 (0) 1524 850506  
 Office Fax: +44 (0) 1524 850608

**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

**E-mail address** begel.sdsdesk@thermofisher.com

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

### SECTION 2. HAZARD IDENTIFICATION

**Physical State**

Liquid

**Appearance**

No information available

**Odor**

No information available

**Emergency Overview**

Causes severe skin burns and eye damage. May be corrosive to metals. Harmful if inhaled.

#### Classification of the substance or mixture

|                                        |              |
|----------------------------------------|--------------|
| Substances/mixtures corrosive to metal | Category 1   |
| Acute Inhalation Toxicity - Vapors     | Category 4   |
| Skin Corrosion/Irritation              | Category 1 A |
| Serious Eye Damage/Eye Irritation      | Category 1   |

#### Label Elements


**Signal Word**
**Danger**
**Hazard Statements**

## Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

H290 - May be corrosive to metals  
H314 - Causes severe skin burns and eye damage  
H332 - Harmful if inhaled

**Precautionary Statements****Prevention**

P234 - Keep only in original packaging  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
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  
P310 - Immediately call a POISON CENTER or doctor  
P363 - Wash contaminated clothing before reuse  
P390 - Absorb spillage to prevent material damage

**Storage**

P402 - Store in a dry place  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P406 - Store in corrosion resistant polypropylene container with a resistant liner

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Physical and Chemical Hazards**

May be corrosive to metals.

**Health Hazards**

Corrosive. Causes skin and eye burns. Causes serious eye damage. Harmful if inhaled.

**Environmental hazards**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

No information available

Toxic to terrestrial vertebrates. This product does not contain any known or suspected endocrine disruptors.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

| Component                                      | CAS No    | Weight % |
|------------------------------------------------|-----------|----------|
| Water                                          | 7732-18-5 | 94.87    |
| Nitric acid ...% [C ≤ 70 %]                    | 7697-37-2 | 5.00     |
| Yttrium oxide (Y <sub>2</sub> O <sub>3</sub> ) | 1314-36-9 | 0.13     |

**SECTION 4. FIRST AID MEASURES****General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.

**Inhalation**

If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.

**Ingestion**

Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.

**Most important symptoms and effects**

Causes burns by all exposure routes. 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

**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.

**Notes to Physician**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Not combustible. CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

**Extinguishing media which must not be used for safety reasons**

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.

**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. Thermal decomposition can lead to release of irritating gases and vapors.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**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**

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

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7. HANDLING AND STORAGE****Handling**

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

**Storage**

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

**Specific Use(s)**

## Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

Use in laboratories

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Control Parameters

| Component                                      | China | ACGIH TLV                 | OSHA PEL                                                                                                                                                              | NIOSH                                                                                                             |
|------------------------------------------------|-------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Nitric acid ...% [C ≤ 70 %]                    | -     | TWA: 2 ppm<br>STEL: 4 ppm | (Vacated) TWA: 2 ppm<br>(Vacated) TWA: 5 mg/m <sup>3</sup><br>(Vacated) STEL: 4 ppm<br>(Vacated) STEL: 10 mg/m <sup>3</sup><br>TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup> | IDLH: 25 ppm<br>REL = 2 ppm (TWA)<br>REL = 5 mg/m <sup>3</sup> (TWA)<br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> |
| Yttrium oxide (Y <sub>2</sub> O <sub>3</sub> ) | -     | TWA: 1 mg/m <sup>3</sup>  |                                                                                                                                                                       | IDLH: 500 mg/m <sup>3</sup><br>REL = 1 mg/m <sup>3</sup> (TWA)                                                    |

| Component                   | Hong Kong                                                                             | Thailand   | European Union                                             | The United Kingdom                                       |
|-----------------------------|---------------------------------------------------------------------------------------|------------|------------------------------------------------------------|----------------------------------------------------------|
| Nitric acid ...% [C ≤ 70 %] | TWA: 2 ppm<br>TWA: 5.2 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> | TWA: 2 ppm | STEL: 1 ppm (15min)<br>STEL: 2.6 mg/m <sup>3</sup> (15min) | STEL: 1 ppm 15 min<br>STEL: 2.6 mg/m <sup>3</sup> 15 min |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

## Monitoring methods

MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry MDHS 99 Metals in air by ICP-AES

## Exposure Controls

## Engineering Measures

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

## Personal protective equipment

## Eye Protection

Goggles (European standard - EN 166)

## Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments        |
|----------------|-------------------|-----------------|-------------|-----------------------|
| Natural rubber | See manufacturers | -               | EN 374      | (minimum requirement) |
| Nitrile rubber | recommendations   |                 |             |                       |
| Neoprene       |                   |                 |             |                       |
| PVC            |                   |                 |             |                       |

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 compatibility, 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

## Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.  
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

## Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

## Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

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

**Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended half mask:-** Particle filtering: EN149:2001

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

**Appearance****Physical State**

Liquid

**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

**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)****Component**

**log Pow**

Nitric acid ...% [C ≤ 70 %]

-2.3

**Autoignition Temperature**

No data available

**Decomposition Temperature**

No data available

**Viscosity**

No data available

**Explosive Properties**

No information available

**Oxidizing Properties**

No information available

**Molecular Formula**

Y2 O3 in 5% HN O3

## SECTION 10. STABILITY AND REACTIVITY

**Stability**

Stable under normal conditions.

**Hazardous Reactions**

None under normal processing.

**Hazardous Polymerization**

No information available.

**Conditions to Avoid**

None known.

**Materials to avoid**

Strong bases. Reducing Agent.

**Hazardous Decomposition Products** Nitrogen oxides (NOx). Yttrium oxide.

Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

## SECTION 11. TOXICOLOGICAL INFORMATION

## Product Information

## (a) acute toxicity;

Toxicology data for the components

| Component                   | LD50 Oral | LD50 Dermal | LC50 Inhalation              |
|-----------------------------|-----------|-------------|------------------------------|
| Water                       | -         | -           | -                            |
| Nitric acid ...% [C ≤ 70 %] |           |             | LC50 = 2500 ppm. (Rat) 1h    |
| Yttrium oxide (Y2O3)        |           |             | LC50 > 5.09 mg/L ( Rat ) 4 h |

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

## (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

None known.

(j) aspiration hazard; No data 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

## SECTION 12. ECOLOGICAL INFORMATION

## Ecotoxicity effects

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

## Persistence and Degradability

Persistence  
Degradation in sewage  
treatment plant

Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary based on information available, May persist. Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

## Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

**Bioaccumulative Potential** May have some potential to bioaccumulate

| Component                   | log Pow | Bioconcentration factor (BCF) |
|-----------------------------|---------|-------------------------------|
| Nitric acid ...% [C ≤ 70 %] | -2.3    | No data available             |

**Mobility in soil** 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** Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH and harm aquatic organisms.

## SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID SOLUTION  
**Hazard Class** 8  
**Packing Group** II

IMDG/IMO

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID SOLUTION  
**Hazard Class** 8  
**Packing Group** II

IATA

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID SOLUTION  
**Hazard Class** 8  
**Packing Group** II

**Special Precautions for User** No special precautions required

## SECTION 15. REGULATORY INFORMATION

**International Inventories**

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

| Component | The | List of | IECSC | EINECS | TSCA | DSL | PICCS | ENCS | ISHL | AICS | KECL |
|-----------|-----|---------|-------|--------|------|-----|-------|------|------|------|------|
|-----------|-----|---------|-------|--------|------|-----|-------|------|------|------|------|

## Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

|                                                | Inventory of Hazardous Chemicals (2015 Edition) | dangerous goods GB 12268 - 2012 |   |           |   |   |   |   |   |   |          |
|------------------------------------------------|-------------------------------------------------|---------------------------------|---|-----------|---|---|---|---|---|---|----------|
| Water                                          | -                                               | -                               | X | 231-791-2 | X | X | X | X |   | X | KE-35400 |
| Nitric acid ...% [C ≤ 70 %]                    | X                                               | X                               | X | 231-714-2 | X | X | X | X | X | X | KE-25911 |
| Yttrium oxide (Y <sub>2</sub> O <sub>3</sub> ) | -                                               | -                               | X | 215-233-5 | X | X | X | X | X | X | KE-35504 |

## National Regulations

## SECTION 16. OTHER INFORMATION

**Prepared By** Health, Safety and Environmental Department  
**Revision Date** 05-Aug-2026  
**Revision Summary** SDS sections updated.

## 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.

Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

## Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

**Physical hazards**

On basis of test data

**Health Hazards**

Calculation method

**Environmental hazards**

Calculation method

**SAFETY DATA SHEET**Yttrium, plasma standard solution, Specpure®, Y 1000µg/ml

---

**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**