

# SAFETY DATA SHEET

Version 8.3  
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SDS No. Eternal-Element - ET-YN-202501  
Product Number Eternal-Element - ET-YN-202501

## Yttrium(III) nitrate hexahydrate

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifiers

Product name : Yttrium(III) nitrate hexahydrate

Product Number : ET-YN-202501  
Brand : Eternal-Element  
CAS-No. : 13494-98-9

#### 1.2 Details of the supplier of the safety data sheet

Company : Shanghai Sheeny Metal Mateirals Co.,Ltd.

Room 210, Kedi Building,  
No. 688 Huajiang Road, Jiading District,  
SHANGHAI  
201800 SHANGHAI CHINA  
上海斯年金属材料有限公司  
上海市嘉定区华江公路688号凯迪大厦210室  
邮政编码: 201800

Telephone : +86 16602150044  
Fax : +86 16602150044

#### 1.3 Emergency telephone

Emergency Phone # : +86 4006632276

#### and uses advised against

Identified uses : For R&D use only. Not for pharmaceutical, household or other uses.

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## SECTION 2: Hazards identification

### Summary of emergency

Crystals with lumps May intensify fire; oxidizer., Harmful if swallowed., Causes serious eye damage., Very toxic to aquatic life with long lasting effects. Show this material safety data sheet to the doctor in attendance. After inhalation: fresh air. In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. After eye contact: rinse out with plenty of water., Immediately call in ophthalmologist., Remove contact lenses. After swallowing: immediately make victim drink water (two glasses at most)., Consult a physician. Not combustible. Ambient fire may liberate hazardous vapours. Risk of ignition or formation of inflammable gases or vapours with: Reducing agents, oxidisable substances, organic combustible substances, alkalines, Strong acids, Cyanides, Isocyanates

### 2.1 GHS Classification

Oxidizing solids (Category 2), H272

Acute toxicity, Oral (Category 4), H302

Serious eye damage/eye irritation (Category 1), H318

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard Statements

H272

May intensify fire; oxidizer.

H302

Harmful if swallowed.

H318

Causes serious eye damage.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P210

Keep away from heat.

P220

Keep/Store away from clothing/ combustible materials.

P221

Take any precaution to avoid mixing with combustibles.

P264

Wash skin thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P273

Avoid release to the environment.

P280

Wear protective gloves/ eye protection/ face protection.

Response

P301 + P312 + P330

IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P305 + P351 + P338 + P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P370 + P378

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P391

Collect spillage.

Disposal  
P501

Dispose of contents/ container to an approved waste disposal plant.

### Reduced Labeling (<= 125 ml)

Pictogram



Signal Word

Danger

Hazard Statements

H272

May intensify fire; oxidizer.

H302

Harmful if swallowed.

H318

Causes serious eye damage.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary Statements none

### 2.3 Physical and chemical hazards

H272

May intensify fire; oxidizer.

### 2.4 Health hazards

H302

Harmful if swallowed.

H318

Causes serious eye damage.

### 2.5 Environmental hazards

H400

Very toxic to aquatic life.

H410

Very toxic to aquatic life with long lasting effects.

### 2.6 Other hazards - none

## SECTION 3: Composition/information on ingredients

Substance / Mixture : Substance

### 3.1 Substances

Formula

:  $\text{N}_3\text{O}_9\text{Y} \cdot 6\text{H}_2\text{O}$

Molecular weight

: 383.01 g/mol

CAS-No.

: 13494-98-9

EC-No.

: 233-802-6

### Hazardous ingredients

Component	Classification	Concentration
<b>Yttrium(III) nitrate hexahydrate</b>		
	Oxidizing solids Category 2; Acute toxicity Category 4; Serious eye damage/eye irritation Category 1; Short-term (acute) aquatic hazard Category 1; Long-term (chronic) aquatic hazard Category 1; H272, H302, H318, H400, H410 M-Factor - Aquatic Acute :	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

### 4.4 Notes to physician

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

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

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO<sub>x</sub>)

Yttrium oxides

Not combustible.

Ambient fire may liberate hazardous vapours.

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Tightly closed. Dry.

Hygroscopic.

#### Storage class

Storage class (TRGS 510) : 13 : Non Combustible Solids

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Yttrium(III) nitrate hexahydrate	13494-98-9	PC-TWA	1 mg/m <sup>3</sup>	Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

### 8.2 Exposure controls

#### Appropriate engineering controls

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

## Personal protective equipment

### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

### Body Protection

protective clothing

### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |  |                     |
|--|---------------------|
| a) Physical state                          | Crystals with lumps |
| b) Color                                   | No data available   |
| c) Odor                                    | No data available   |
| d) Melting point/freezing point            | No data available   |
| e) Initial boiling point and boiling range | No data available   |

f) Flammability (solid, gas)	The product is not flammable.
g) Upper/lower flammability or explosive limits	No data available
h) Flash point	Not applicable
i) Autoignition temperature	No data available
j) Decomposition temperature	No data available
k) pH	No data available
l) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
m) Water solubility	No data available
n) Partition coefficient: n-octanol/water	Not applicable for inorganic substances
o) Vapor pressure	No data available
p) Density	2.682 g/mL at 25 °C - lit.
Relative density	No data available
q) Relative vapor density	No data available
r) Particle characteristics	No data available
s) Explosive properties	No data available
t) Oxidizing properties	none

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.2 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Reducing agents

oxidisable substances

organic combustible substances

alkalines

Strong acids

Cyanides

Isocyanates

**10.3 Conditions to avoid**

no information available

**10.4 Incompatible materials**

Organic materials, Powdered metals

**10.5 Hazardous decomposition products**

In the event of fire: see section 5

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**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral - Rat - male and female - 1,650 mg/kg  
(OECD Test Guideline 401)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Yttrium(III) nitrate  
Inhalation : Irritating to respiratory system.

Symptoms: Possible damages:, mucosal irritations, bronchitis

LD50 Dermal - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 402)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Yttrium(III) nitrate

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 24 h  
(OECD Test Guideline 404)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Yttrium(III) nitrate

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes serious eye damage.  
(OECD Test Guideline 405)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Yttrium(III) nitrate

**Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Yttrium(III) nitrate

**Germ cell mutagenicity**

No data available

Test Type : Ames test

Test system : Escherichia coli/Salmonella typhimurium

Metabolic activation : with and without metabolic activation

Method : OECD Test Guideline 471

Result: negative

Remarks: (anhydrous substance)



The value is given in analogy to the following substances: Yttrium(III) nitrate  
Test Type : In vitro mammalian cell gene mutation test

Test system : mouse lymphoma cells

Metabolic activation : with and without metabolic activation

Method : OECD Test Guideline 476

Result: negative

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Yttrium(III) nitrate  
Test Type : Chromosome aberration test in vitro

Test system : Chinese hamster ovary cells

Metabolic activation : with and without metabolic activation

Method : OECD Test Guideline 473

Result: negative

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Yttrium(III) nitrate  
**Carcinogenicity**

No data available

### **Reproductive toxicity**

No data available

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

No data available

### **Aspiration hazard**

No data available

## **11.2 Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) -  $\geq 1,000$  mg/kg

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Yttrium(III) nitrate

RTECS : ZG3750000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## **SECTION 12: Ecological information**

### **12.1 Toxicity**

Toxicity to fish	semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0.62 mg/l - 96 h
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(OECD Test Guideline 203)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances:

Yttrium(III) nitrate

Toxicity to daphnia and other aquatic invertebrates      static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h  
(Regulation (EC) No. 440/2008, Annex, C.2)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances:

Yttrium(III) nitrate

Toxicity to bacteria      static test EC50 - activated sludge - 470 mg/l - 3 h  
(OECD Test Guideline 209)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances:

Yttrium(III) nitrate

## 12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

## 12.3 Bioaccumulative potential

No data available

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

## 12.6 Endocrine disrupting properties

No data available

## 12.7 Other adverse effects

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of drinking- water supplies.

Discharge into the environment must be avoided.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

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## SECTION 14: Transport information

#### 14.1 UN number

ADR/RID : 3077

IMDG : 3077

IATA-DGR: 3077

#### 14.2 UN proper shipping name

ADR/RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Yttrium(III) nitrate hexahydrate)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Yttrium(III) nitrate hexahydrate)

IATA-DGR: Environmentally hazardous substance, solid, n.o.s. (Yttrium(III) nitrate hexahydrate)

#### 14.3 Transport hazard class(es)

ADR/RID : 9

IMDG : 9

IATA-DGR: 9

#### 14.4 Packaging group

ADR/RID : III

IMDG : III

IATA-DGR: III

#### 14.5 Environmental hazards

ADR/RID : yes

IMDG Marine pollutant: yes

IATA-DGR: yes

#### 14.6 Special precautions for user

#### 14.7 Incompatible materials

Organic materials, Powdered metals

#### Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

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### SECTION 15: Regulatory information

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

##### National regulatory information

##### Law on the Prevention and Control of Occupational Diseases

##### Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : Listed

##### Other regulations

Please pay attention on the waste treatment should also comply with local regulations requirement.

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### SECTION 16: Other information

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#### Full text of H-Statements referred to under sections 2 and 3.

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H318 Causes serious eye damage.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Eternal-Element Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.eternal-element.com](http://www.eternal-element.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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