

1. Identification

Product identifier	YTTERBIUM, 1,000 ppm ICP STANDARD SOLUTION	
Other means of identification		
Product code	1833	
Recommended use	professional, scientific and technical activities: other professional, scientific and technical activities	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	GFS Chemicals, Inc.	
Address	P.O. Box 245 Powell, OH 43065 United States	
Telephone	Phone	740-881-5501
	Toll Free	800-858-9682
	Fax	740-881-5989
Website	www.gfschemicals.com	
E-mail	service@gfschemicals.com	
Emergency phone number	Emergency Assistance	Chemtrec 800-424-9300

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Causes severe skin burns and eye damage. Causes serious eye damage. May cause damage to organs through prolonged or repeated exposure.
Precautionary statement	
Prevention	Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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 or doctor/physician. Wash contaminated clothing before reuse.
Storage	Store locked up.
Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
WATER		7732-18-5	96.37
NITRIC ACID		7697-37-2	3 - < 5
Other components below reportable levels			< 0.3

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Use extinguishing agent suitable for type of surrounding fire. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	This product is miscible in water. Should not be released into the environment. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
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Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
NITRIC ACID (CAS 7697-37-2)	PEL	5 mg/m ³
		2 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
NITRIC ACID (CAS 7697-37-2)	STEL	4 ppm
	TWA	2 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
NITRIC ACID (CAS 7697-37-2)	STEL	10 mg/m ³
		4 ppm
	TWA	5 mg/m ³ 2 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

No personal respiratory protective equipment normally required. In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color Colorless.

Odor Odorless.

Odor threshold Not available.

pH < 1

Melting point/freezing point 32 °F (0 °C) estimated

Initial boiling point and boiling range 212 °F (100 °C) estimated

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Miscible.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

Density	1.03 g/cm3
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	99 % estimated
Specific gravity	1.03

10. Stability and reactivity

Reactivity This product may react with reducing agents.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials. Do not mix with other chemicals.

Incompatible materials Bases. Reducing agents.

Hazardous decomposition products May include oxides of nitrogen.

11. Toxicological information**Information on likely routes of exposure**

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects**Acute toxicity**

Product	Species	Test Results
YTTERBIUM, 1,000 ppm ICP STANDARD SOLUTION		
Acute		
Inhalation		
LC50	Mouse	7219 mg/l, 30 Minutes estimated 3126 mg/l
	Rat	1982 mg/l, 4 Hours estimated 4083 mg/l, 30 Minutes estimated

Product	Species	Test Results
		1923 mg/l, 4 Hours estimated
Components	Species	Test Results
NITRIC ACID (CAS 7697-37-2)		
Acute		
Inhalation		
LC50	Mouse	244 mg/l, 30 Minutes
		67 mg/l, 4 Hours
	Rat	334 mg/l, 30 Minutes
		244 mg/l, 30 Minutes
		138 mg/l, 30 Minutes
		65 mg/l, 4 Hours

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

US OSHA Hazard Categories (1)

Not regulated.

US OSHA Hazard Categories (10)

Not regulated.

US OSHA Hazard Categories (2)

Not regulated.

US OSHA Hazard Categories (3)

Not regulated.

US OSHA Hazard Categories (4)

Not regulated.

US OSHA Hazard Categories (5)

Not regulated.

US OSHA Hazard Categories (6)

Not regulated.

US OSHA Hazard Categories (7)

Not regulated.

US OSHA Hazard Categories (8)

Not regulated.

US OSHA Hazard Categories (9)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Product	Species		Test Results
YTTERBIUM, 1,000 ppm ICP STANDARD SOLUTION			
Aquatic			
Crustacea	LC50	Daphnia	8492 mg/l, 48 Hours
Fish	LC50	Fish	4322 mg/l, 48 Hours
Components	Species		Test Results
NITRIC ACID (CAS 7697-37-2)			
Aquatic			
Crustacea	LC50	Cockle (<i>Cerastoderma edule</i>)	330 - 1000 mg/l, 48 hours
		Green or European shore crab (<i>Carcinus maenas</i>)	180 mg/l, 48 hours
Fish	LC50	Starfish (<i>Asterias rubens</i>)	100 - 330 mg/l, 48 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.
Bioaccumulative potential No data available.
Mobility in soil No data available.
Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations Dispose in accordance with all applicable regulations.
Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3264
UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (NITRIC ACID RQ = 29586 LBS)
Transport hazard class(es)
Class 8
Subsidiary risk -
Label(s) 8
Packing group III
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions IB3, T7, TP1, TP28
Packaging exceptions 154
Packaging non bulk 203
Packaging bulk 241

IATA

UN number UN3264
UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (NITRIC ACID)
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No.

ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Other information
Passenger and cargo aircraft Allowed with restrictions.
Cargo aircraft only Allowed with restrictions.

IMDG
UN number UN3264
UN proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant No.
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

NITRIC ACID (CAS 7697-37-2) Listed.

SARA 304 Emergency release notification

NITRIC ACID (CAS 7697-37-2) 1000 LBS

US OSHA Hazard Categories (1)

Not regulated.

US OSHA Hazard Categories (2)

Not regulated.

US OSHA Hazard Categories (3)

Not regulated.

US OSHA Hazard Categories (4)

Not regulated.

US OSHA Hazard Categories (5)

Not regulated.

US OSHA Hazard Categories (6)

Not regulated.

US OSHA Hazard Categories (7)

Not regulated.

US OSHA Hazard Categories (8)

Not regulated.

US OSHA Hazard Categories (9)

Not regulated.

US OSHA Hazard Categories (10)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
NITRIC ACID	7697-37-2	1000	1000 lbs		

SARA 311/312 Hazardous chemical
 No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
NITRIC ACID	7697-37-2	3 - < 5

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

NITRIC ACID (CAS 7697-37-2)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations**US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

NITRIC ACID (CAS 7697-37-2)

US. Massachusetts RTK - Substance List

NITRIC ACID (CAS 7697-37-2)

US. New Jersey Worker and Community Right-to-Know Act

NITRIC ACID (CAS 7697-37-2)

US. Pennsylvania Worker and Community Right-to-Know Law

NITRIC ACID (CAS 7697-37-2)

US. Rhode Island RTK

NITRIC ACID (CAS 7697-37-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	March-17-2016
Version #	01
Disclaimer	GFS Chemicals, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.
Revision information	Composition / Information on Ingredients: Ingredients Physical & Chemical Properties: Multiple Properties Transport Information: Proper Shipping Name/Packing Group