Printing date 03/30/2019

### Version Number 4

Reviewed on 03/30/2019

## **1** Identification

Agilent

- · Product identifier
- · Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)
- · Part number: IAA-090
- · Application of the substance / the mixture Reagents and Standards for Analytical Chemical Laboratory Use
- · Details of the supplier of the safety data sheet

· Manufacturer/Supplier: Agilent Technologies, Inc. 5301 Stevens Creek Blvd. Santa Clara, CA 95051 USA

### · Information department:

Telephone: 800-227-9770 e-mail: pdl-msds author@agilent.com · Emergency telephone number: CHEMTREC®: 1-800-424-9300

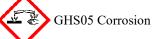
## 2 Hazard(s) identification

### · Classification of the substance or mixture



GHS08 Health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



Eye Dam. 1 H318 Causes serious eye damage.



Skin Irrit. 2 H315 Causes skin irritation.

- · Label elements
- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms



· Signal word Danger

· Hazard-determining components of labeling: nitric acid thorium nitrate hydrate

### · Hazard statements

- Causes skin irritation.
- Causes serious eye damage.

May cause damage to organs through prolonged or repeated exposure.

(Contd. on page 2)

US

Reviewed on 03/30/2019

### Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)

(Contd. of page 1)

• **Precautionary statements** Do not breathe dust/fume/gas/mist/vapors/spray.

Wash thoroughly after handling.

Wear protective gloves / eye protection / face protection.

If on skin: Wash with plenty of water.

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.

Specific treatment (see on this label).

Get medical advice/attention if you feel unwell.

Take off contaminated clothing and wash it before reuse.

0

If skin irritation occurs: Get medical advice/attention.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- NFPA ratings (scale 0 4)



Health = 3 Fire = 0 Reactivity = 0

· HMIS-ratings (scale 0 - 4)

HEALTH	3	Health = 3
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity =

· Other hazards

- · Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## **3** Composition/information on ingredients

· Chemical characterization: Mixtures

• Description: Mixture of the substances listed below with nonhazardous additions.

### · Dangerous components:

0	•	
7697-37-2	nitric acid	3.96%
13823-29-5	thorium nitrate hydrate	2.069%

## **4 First-aid measures**

## · Description of first aid measures

· General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

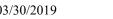
• After inhalation: In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: If symptoms persist consult doctor.

(Contd. on page 3)



Printing date 03/30/2019



<sup>—</sup> US

Reviewed on 03/30/2019

Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)

(Contd. of page 2)

- · Information for doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

## **5 Fire-fighting measures**

- · Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.

· Special hazards arising from the substance or mixture

- During heating or in case of fire poisonous gases are produced.
- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

## 6 Accidental release measures

011001000		
Mount respi Wear protec	ecautions, protective equipment and emergency procedures ratory protective device. tive equipment. Keep unprotected persons away.	
· Environme	ntal precautions: Do not allow to enter sewers/ surface or ground water.	
Absorb with Use neutrali		
	taminated material as waste according to item 13.	
	uate ventilation.	
	o other sections	
See Section 7 for information on safe handling.		
	8 for information on personal protection equipment.	
	13 for disposal information.	
• Protective A	Action Criteria for Chemicals	
· PAC-1:		
7697-37-2		0.16 ppm
13823-29-5	thorium nitrate hydrate	2.9 mg/m <sup>3</sup>
· PAC-2:		
7697-37-2	nitric acid	24 ppm
13823-29-5	thorium nitrate hydrate	32 mg/m <sup>3</sup>
· PAC-3:		
7697-37-2	nitric acid	92 ppm
13823-29-5	thorium nitrate hydrate	190 mg/m <sup>3</sup>

# 7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.

(Contd. on page 4)



Printing date 03/30/2019

<sup>-</sup> US

Version Number 4

Reviewed on 03/30/2019

Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)

(Contd. of page 3)

· Information about protection against explosions and fires: Keep respiratory protective device available.

· Conditions for safe storage, including any incompatibilities

· Storage:

Printing date 03/30/2019

- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

## 8 Exposure controls/personal protection

Ag	ilent
----	-------

• Additional information about design of technical systems: No further data; see item 7.

· Control parameters

· Components with limit values that require monitoring at the workplace:

### 7697-37-2 nitric acid

PEL Long-term value: 5 mg/m<sup>3</sup>, 2 ppm

- REL Short-term value: 10 mg/m<sup>3</sup>, 4 ppm Long-term value: 5 mg/m<sup>3</sup>, 2 ppm
- TLV Short-term value: 10 mg/m<sup>3</sup>, 4 ppm Long-term value: 5.2 mg/m<sup>3</sup>, 2 ppm

• Additional information: The lists that were valid during the creation were used as basis.

### $\cdot$ Exposure controls

### · Personal protective equipment:

· General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

### <sup>•</sup> Breathing equipment:

When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.

### · Protection of hands:

Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

### · Material of gloves

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

- · Penetration time of glove material
- For normal use: nitrile rubber: 1 hour For direct contact with the chemical: butyl rubber: >4 hours

(Contd. on page 5)

- U

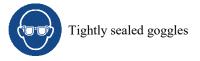
Version Number 4

Reviewed on 03/30/2019

Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)

(Contd. of page 4)

· Eye protection:



Information on basic physical and c	hemical properties	
General Information		
Appearance: Form:	Fluid	
Form: Color:	Colorless	
Odor:	Odorless	
Odor threshold:	Not determined.	
pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	Undetermined.	
<b>Boiling point/Boiling range:</b>	100 °C (212 °F)	
Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
<b>Decomposition temperature:</b>	Not determined.	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)	
Density:	Not determined.	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with	Not miscible or difficult to mix.	
Water:		
Partition coefficient (n-octanol/wate	r): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:	04.0.0/	
Water:	94.0 %	
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal	

# Agilent

Printing date 03/30/2019

Reviewed on 03/30/2019

Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)

(Contd. of page 5)

```
Solids content:
· Other information
```

0.0 % No further relevant information available.

# **10 Stability and reactivity**

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

## **11 Toxicological information**

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

**ATE (Acute Toxicity Estimate)** 

Oral LD50 24,170 mg/kg

Inhalative LC50/4 h 1,692 mg/L (rat)

### 7697-37-2 nitric acid

Inhalative LC50/4 h 67 mg/L (rat)

### · Primary irritant effect:

• on the skin: Irritant to skin and mucous membranes.

- on the eye: Strong irritant with the danger of severe eye injury.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Irritant

### · Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

### · NTP (National Toxicology Program)

None of the ingredients is listed.

### · OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

## **12 Ecological information**

· Toxicity

· Aquatic toxicity: No further relevant information available.

· Persistence and degradability No further relevant information available.

(Contd. on page 7)

US

Version Number 4

Printing date 03/30/2019

Reviewed on 03/30/2019

## Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)

(Contd. of page 6)

· Behavior in environmental systems:

- · Bioaccumulative potential No further relevant information available.
- $\cdot$  Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or unneutralized.

- · Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

## **13 Disposal considerations**

· Waste treatment methods

· Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packagings:

• Recommendation: Disposal must be made according to official regulations.

UN-Number	
DOT, IMDG, IATA	UN3264
UN proper shipping name	
DOT	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRICACID)
Transport hazard class(es)	
DOT, IMDG, IATA	
Class	8 Corrosive substances
Label	8
Packing group	
DOT, IMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Corrosive substances
Danger code (Kemler):	80
EMG N I	F-A,S-B
EMS Number:	
EMS Number: Segregation groups Stowage Category	Acids



Printing date 03/30/2019

Reviewed on 03/30/2019

### Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)

	(Contd. of page 7
· Stowage Code	SW2 Clear of living quarters.
• Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
• Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L
-	On cargo aircraft only: 60 L
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III

## **15 Regulatory information**

 $\cdot$  Safety, health and environmental regulations/legislation specific for the substance or mixture  $\cdot$  Sara

· Section 355 (extremely hazardous substances):

7697-37-2 nitric acid

· Section 313 (Specific toxic chemical listings):

7697-37-2 nitric acid

13823-29-5 thorium nitrate hydrate

• TSCA (Toxic Substances Control Act):

All ingredients are listed.

· TSCA new (21st Century Act): (Substances not listed)

13823-29-5 thorium nitrate hydrate

Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

(Contd. on page 9)

US

Printing date 03/30/2019



Agilent

Printing date 03/30/2019

#### Version Number 4

Reviewed on 03/30/2019

Trade name: Thorium EnviroConcentrate; Thorium Standard (10 mL)

(Contd. of page 8)

### · TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

### · NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### **16 Other information**

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- · Department issuing SDS: Document Control / Regulatory
- · Contact: regulatory@ultrasci.com
- · Date of preparation / last revision 03/30/2019 / 3
- · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association ACGIH: American Conference of Governmental Industrial Hygienists EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances

- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- NIOSH: National Institute for Occupational Safety
- OSHA: Occupational Safety & Health
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit
- REL: Recommended Exposure Limit
- Skin Irrit. 2: Skin corrosion/irritation Category 2 Eye Dam. 1: Serious eye damage/eye irritation - Category 1
- STOT RE 2: Specific target organ toxicity (repeated exposure) Category 2
- \* \* Data compared to the previous version altered.

