

# Internal standard mix for ICP-MS systems - 8 components; 10ug/ml each of 6Li ; Sc ; Ge ; Rh ; In ; Tb ; Lu ; Bi in HNO<sub>3</sub> 10% /tr HCl Equivalent to Agilent Ref: 5188-6525

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 09/10/2016

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Version: 1.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Name : Internal standard mix for ICP-MS systems - 8 components; 10ug/ml each of 6Li ; Sc ; Ge ; Rh ; In ; Tb ; Lu ; Bi in HNO<sub>3</sub> 10% /tr HCl Equivalent to Agilent Ref: 5188-6525  
Product code : EQ0008

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Certified reference material for laboratory use

#### 1.3. Details of the supplier of the safety data sheet

##### Spectracer UK Ltd.

Second Floor,  
27 Gloucester Place,  
London,  
W1U 8HU,  
United Kingdom.

Tel: +44 (0) 207 193 9114

Fax: +44 (0) 203 432 4686

Email: [contact@spectracer.co.uk](mailto:contact@spectracer.co.uk)

Web: [www.spectracer.com](http://www.spectracer.com)

#### 1.4. Emergency telephone number

Emergency number : Tel: +44(0)1933445260 Option 1. Language: English only.  
For Chemical Emergencies Only  
Llewellyn (Safety Advisors) Europe Ltd

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Corrosive to metals H290

Category 1

Skin corrosion/irritation H314

Category 1A

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H290 - May be corrosive to metals  
H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) :

P234 - Keep only in original container  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
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/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

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lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a poison center/doctor/...  
P363 - Wash contaminated clothing before reuse  
P390 - Absorb spillage to prevent material damage  
P405 - Store locked up  
P501 - Dispose of contents/container to ..

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product identifier	%	GHS-US classification
nitric acid	(CAS No) 7697-37-2	5 - 15	Ox. Liq. 3, H272 Met. Corr. 1, H290 Skin Corr. 1A, H314
hydrochloric acid	(CAS No) 7647-01-0	0.1 - 1	Met. Corr. 1, H290 Skin Corr. 1B, H314 STOT SE 3, H335
Indium(III) nitrate, pentahydrate	(CAS No) 13465-14-0	< 0.1	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
rhodium trichloride	(CAS No) 10049-07-7	< 0.1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.  
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.  
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

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

Symptoms/injuries after skin contact : Burns.  
Symptoms/injuries after eye contact : Serious damage to eyes.  
Symptoms/injuries after ingestion : Burns.

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

#### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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#### SECTION 6: Accidental release measures

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

###### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray.

###### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

##### 6.2. Environmental precautions

Avoid release to the environment.

##### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.  
Other information : Dispose of materials or solid residues at an authorized site.

##### 6.4. Reference to other sections

For further information refer to section 13.

#### SECTION 7: Handling and storage

##### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Wear personal protective equipment.  
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Storage conditions : Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store locked up. Store in a well-ventilated place. Keep cool.  
Incompatible materials : Metals.

#### SECTION 8: Exposure controls/personal protection

##### 8.1. Control parameters

nitric acid (7697-37-2)		
ACGIH	ACGIH TWA (ppm)	2 ppm
ACGIH	ACGIH STEL (ppm)	4 ppm
ACGIH	Remark (ACGIH)	URT & eye irr; dental erosion
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (ppm)	2 ppm
hydrochloric acid (7647-01-0)		
ACGIH	ACGIH Ceiling (ppm)	2 ppm
ACGIH	Remark (ACGIH)	URT irr
OSHA	OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	7 mg/m <sup>3</sup>
OSHA	OSHA PEL (Ceiling) (ppm)	5 ppm
rhodium trichloride (10049-07-7)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup> (Rhodium, Soluble compounds, as Rh; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Not applicable		
Indium(III) nitrate, pentahydrate (13465-14-0)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>

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Indium(III) nitrate, pentahydrate (13465-14-0)		
ACGIH	Remark (ACGIH)	Pulm edema; pneumonitis

#### 8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
 Personal protective equipment : Avoid all unnecessary exposure. Gloves. Safety glasses. Protective clothing.



Hand protection : Protective gloves.  
 Eye protection : Safety glasses.  
 Skin and body protection : Wear suitable protective clothing.  
 Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.  
 Environmental exposure controls : Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid  
 Color : Mixture contains one or more component(s) which have the following colour(s): colorless to yellow On exposure to light: red-brown Colourless to light yellow Colourless to white Colourless to light red White No data available on colour Colorless  
 Odor : There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure.  
 Mixture contains one or more component(s) which have the following odour(s): irritating/pungent odor asphyxiating odor No data available on odour Odorless  
 Odor threshold : No data available  
 pH : No data available  
 Melting point : Not applicable  
 Freezing point : No data available  
 Boiling point : No data available  
 Flash point : No data available  
 Relative evaporation rate (butyl acetate=1) : No data available  
 Flammability (solid, gas) : Not applicable.  
 Vapor pressure : No data available  
 Relative vapor density at 20 °C : No data available  
 Relative density : 1.06  
 Solubility : Miscible with water.  
 Log Pow : No data available  
 Auto-ignition temperature : No data available  
 Decomposition temperature : No data available  
 Viscosity, kinematic : No data available  
 Viscosity, dynamic : No data available  
 Explosion limits : No data available  
 Explosive properties : No data available  
 Oxidizing properties : No data available

### 9.2. Other information

No additional information available

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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

metals.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

rhodium trichloride (10049-07-7)	
LD50 oral rat	1302 mg/kg (Rat)
ATE US (oral)	1302.000 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns and eye damage.  
Serious eye damage/irritation : Not classified  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

hydrochloric acid (7647-01-0)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified  
Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after skin contact : Burns.  
Symptoms/injuries after eye contact : Serious damage to eyes.  
Symptoms/injuries after ingestion : Burns.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

nitric acid (7697-37-2)	
EC50 Daphnia 1	180 mg/l (EC50; 48 h)
LC50 fish 2	72 ppm (LC50; 96 h)
Threshold limit algae 1	> 19 mg/l (EC0)

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hydrochloric acid (7647-01-0)	
LC50 other aquatic organisms 2	250 (240 - 260) mg/l (48h) Crustaceans; Portmann, J.E., and K.W. Wilson 1971. The Toxicity of 140 Substances to the Brown Shrimp and Other Marine Animals. Shellfish Information Leaflet No.22 (2nd Ed.), Ministry of Agric.Fish.Food, Fish.Lab.Burnham-on-Crouch, Essex, and Fish Exp.Station Conway, North Wales :12 p.

#### 12.2. Persistence and degradability

nitric acid (7697-37-2)	
Persistence and degradability	Biodegradability: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

rhodium trichloride (10049-07-7)	
Persistence and degradability	Biodegradability in soil: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

#### 12.3. Bioaccumulative potential

nitric acid (7697-37-2)	
BCF fish 1	<= 1 (BCF)
Log Pow	-2.3 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Bioaccumulative potential	Bioaccumulation: Not applicable.

rhodium trichloride (10049-07-7)	
Bioaccumulative potential	Bioaccumulation: No data available.

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

Effect on the global warming : No known effects from this product.  
 GWPmix comment : No known effects from this product.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
 Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT  
 Transport document description : UN2031 Nitric acid other than (red fuming, with not more than 20 percent nitric acid), 8, II  
 UN-No.(DOT) : UN2031  
 Proper Shipping Name (DOT) : Nitric acid other than red fuming, with not more than 20 percent nitric acid  
 Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136  
 Packing group (DOT) : II - Medium Danger

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Hazard labels (DOT) : 8 - Corrosive



DOT Packaging Non Bulk (49 CFR 173.xxx) : 158  
 DOT Packaging Bulk (49 CFR 173.xxx) : 242  
 DOT Special Provisions (49 CFR 172.102) : A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging  
 B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized  
 B47 - Each tank may have a reclosing pressure relief device having a start-to-discharge pressure setting of 310 kPa (45 psig)  
 B53 - Packaging must be made of either aluminum or steel  
 IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized  
 T8 - 4 178.274(d)(2) Normal..... Prohibited  
 TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively  
 TP12 - This material is considered highly corrosive to steel

DOT Packaging Exceptions (49 CFR 173.xxx) : None  
 DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L  
 DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L  
 DOT Vessel Stowage Location : D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded

Emergency Response Guide (ERG) Number : 157

Other information : No supplementary information available.

#### TDG

Transport document description : UN2031 NITRIC ACID (other than red fuming, with less than 65% nitric acid), 8, II  
 UN-No. (TDG) : UN2031  
 Proper Shipping Name (TDG) : NITRIC ACID  
 TDG Primary Hazard Classes : 8 - Class 8 - Corrosives  
 Packing group : II - Medium Danger  
 Explosive Limit and Limited Quantity Index : 1 L  
 Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : Forbidden  
 Passenger Carrying Ship Index : Forbidden

#### Transport by sea

UN-No. (IMDG) : 2031  
 Proper Shipping Name (IMDG) : NITRIC ACID  
 Class (IMDG) : 8 - Corrosive substances  
 Packing group (IMDG) : II - substances presenting medium danger  
 Limited quantities (IMDG) : 1 L

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#### Air transport

UN-No. (IATA)	: 2031
Proper Shipping Name (IATA)	: Nitric acid
Class (IATA)	: 8 - Corrosives
Packing group (IATA)	: II - Medium Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### nitric acid (7697-37-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ	1000 lb
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SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb
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#### hydrochloric acid (7647-01-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Not subject to reporting requirements of the United States SARA Section 313  
Subject to reporting requirements of United States SARA Section 313

EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA
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CERCLA RQ	5000 lb
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SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
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#### rhodium trichloride (10049-07-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Indium(III) nitrate, pentahydrate (13465-14-0)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

Revision date : 09/10/2016



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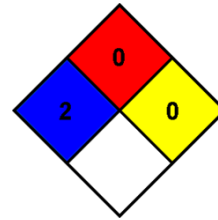
Full text of H-phrases:

H272	May intensify fire; oxidizer
H290	May be corrosive to metals
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : C

C - Safety glasses, Gloves, Synthetic apron

SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*