

# Calibration mix 1 for AA and ICP-OES 4 components; 100mg/l each of Mo ; Sb ; Sn ; Ti in HNO3 2% ; HF 0.5% Equivalent to Agilent Ref: 6610030500

## 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 : Calibration mix 1 for AA and ICP-OES 4 components; 100mg/l each of Mo ; Sb ; Sn ; Ti in HNO3 2% ; HF 0.5% Equivalent to Agilent Ref: 6610030500  
Product code : EQ0023

#### 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

Skin corrosion/irritation H315  
Category 2  
Serious eye damage/eye irritation H319  
Category 2A

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning  
Hazard statements (GHS-US) : H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
Precautionary statements (GHS-US) : P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P302+P352 - If on skin: Wash with plenty of water/...  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P362+P364 - Take off contaminated clothing and wash it before reuse

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### 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	1 - 5	Ox. Liq. 3, H272 Met. Corr. 1, H290 Skin Corr. 1A, H314
hydrofluoric acid	(CAS No) 7664-39-3	0.1 - 1	Met. Corr. 1, H290 Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation), H330 Skin Corr. 1A, H314
hexafluoroantimonic acid	(CAS No) 16950-06-4	< 0.1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1B, H314 Aquatic Chronic 2, H411

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 poison center/doctor/physician if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash skin with plenty of water. Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

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

- Symptoms/injuries after skin contact : Irritation.
- Symptoms/injuries after eye contact : Eye irritation.

### 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.

## 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, eyes and clothing.

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### 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. Do not get in eyes, on skin, or on clothing. 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 locked up. Store in a well-ventilated place. Keep cool.

## 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
hydrofluoric acid (7664-39-3)		
ACGIH	ACGIH TWA (ppm)	0.50 ppm
ACGIH	ACGIH Ceiling (ppm)	2 ppm
ACGIH	Remark (ACGIH)	URT, LRT, skin, & eye irr
OSHA	Remark (OSHA)	(2) See Table Z-2.
hexafluoroantimonic acid (16950-06-4)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	Skin & URT irr
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>

### 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.

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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 Colorless Colourless to light brown White
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
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

### 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

No additional information available

#### 10.6. Hazardous decomposition products

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

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>hydrofluoric acid (7664-39-3)</b>	
ATE US (oral)	5.000 mg/kg body weight
ATE US (dermal)	5.000 mg/kg body weight
ATE US (gases)	100.000 ppmV/4h
ATE US (vapors)	0.500 mg/l/4h
ATE US (dust, mist)	0.050 mg/l/4h

<b>hexafluoroantimonic acid (16950-06-4)</b>	
ATE US (oral)	500.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h

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

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 : Irritation.  
 Symptoms/injuries after eye contact : Eye irritation.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

<b>nitric acid (7697-37-2)</b>	
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)

<b>hydrofluoric acid (7664-39-3)</b>	
LC50 fish 1	107.5 mg/l (LC50; 96 h)
EC50 Daphnia 1	270 mg/l (EC50; 48 h)
Threshold limit algae 1	95 mg/l (EC0; 96 h)

#### 12.2. Persistence and degradability

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

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nitric acid (7697-37-2)	
ThOD	Not applicable
hydrofluoric acid (7664-39-3)	
Persistence and degradability	Biodegradability: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
hexafluoroantimonic acid (16950-06-4)	
Persistence and degradability	Biodegradability: 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.
hydrofluoric acid (7664-39-3)	
Log Pow	-1.4 (Experimental value)
Bioaccumulative potential	Bioaccumulation: Not applicable.
hexafluoroantimonic acid (16950-06-4)	
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  
 Not regulated

### TDG

Not regulated

### Transport by sea

UN-No. (IMDG) : 3287  
 Proper Shipping Name (IMDG) : TOXIC LIQUID, INORGANIC, N.O.S.  
 Class (IMDG) : 6.1 - Toxic substances  
 Packing group (IMDG) : III - substances presenting low danger

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Limited quantities (IMDG) : 5 L

### Air transport

UN-No. (IATA) : 3287  
Proper Shipping Name (IATA) : Toxic liquid, inorganic, n.o.s.  
Class (IATA) : 6.1 - Toxic Substances  
Packing group (IATA) : III - Minor 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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#### hydrofluoric acid (7664-39-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
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	100 lb
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SARA Section 302 Threshold Planning Quantity (TPQ)	100 lb
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#### hexafluoroantimonic acid (16950-06-4)

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
H300	Fatal if swallowed
H302	Harmful if swallowed
H310	Fatal in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H319	Causes serious eye irritation
H330	Fatal if inhaled
H332	Harmful if inhaled
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard

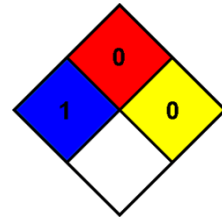
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

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

: 1 Slight Hazard - Irritation or minor reversible injury possible

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.*