

Safety Data Sheet

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

Date of issue: 09/10/2016

Revision date: 09/10/2016

Version: 1.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Name : Tuning Solution for ICP/MS 9 components; 10mg/l each of Ba ; Be ; Ce ; Co ; In ; Mg ; Pb ; Th ; Tl in HNO3 2% Equivalent to Agilent Ref: 190024400
Product code : EQ0013

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

Web: 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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Safety Data Sheet

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

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
beryllium nitrate	(CAS No) 13597-99-4	< 0.1	Acute Tox. 3 (Oral), H301 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317 Carc. 1B, H350 STOT SE 3, H335 STOT RE 1, H372 Aquatic Acute 3, H402 Aquatic Chronic 2, H411
cobalt dinitrate	(CAS No) 10141-05-6	< 0.1	Resp. Sens. 1, H334 Skin Sens. 1, H317 Muta. 2, H341 Carc. 2, H351 Repr. 1B, H360 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Indium(III) nitrate, pentahydrate	(CAS No) 13465-14-0	< 0.1	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
barium nitrate	(CAS No) 10022-31-8	< 0.1	Acute Tox. 4 (Oral), H302
lead nitrate	(CAS No) 10099-74-8	< 0.1	Carc. 1B, H350 Repr. 1A, H360 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
thallium(I)nitrate	(CAS No) 10102-45-1	< 0.1	Acute Tox. 2 (Oral), H300 STOT RE 2, H373 Aquatic Acute 2, H401 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 after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash skin with plenty of water. Take off 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 : 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.

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Safety Data Sheet

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

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 and eyes.

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. Wear personal protective equipment. Avoid contact with skin and eyes.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : 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 ³)	5 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	2 ppm
barium nitrate (10022-31-8)		
ACGIH	ACGIH TWA (mg/m ³)	0.5 mg/m ³ (Barium, soluble compounds, as Ba; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
OSHA	OSHA PEL (TWA) (mg/m ³)	0.5 mg/m ³
beryllium nitrate (13597-99-4)		
ACGIH	ACGIH TWA (mg/m ³)	0.00005 mg/m ³
ACGIH	Remark (ACGIH)	Beryllium sens; chronic beryllium; Skin; DSEN; RSEN; A1
OSHA	Remark (OSHA)	(2) See Table Z-2.

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Safety Data Sheet

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

cobalt dinitrate (10141-05-6)		
ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³ (Cobalt, inorganic compounds, as Co; 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 ³)	0.1 mg/m ³
ACGIH	Remark (ACGIH)	Pulm edema; pneumonitis
lead nitrate (10099-74-8)		
ACGIH	ACGIH TWA (mg/m ³)	0.05 mg/m ³ (Lead, inorganic compounds, as Pb; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	CNS & PNS impair
thallium(I)nitrate (10102-45-1)		
ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³
ACGIH	Remark (ACGIH)	dam; peripheral neuropathy
OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³

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 white White to light yellow Colourless or white Light red Colourless-white White or colourless
 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 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.

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Safety Data Sheet

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

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.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

barium nitrate (10022-31-8)	
LD50 oral rat	355 mg/kg (Rat)
ATE US (oral)	355.000 mg/kg body weight
beryllium nitrate (13597-99-4)	
ATE US (oral)	100.000 mg/kg body weight
lead nitrate (10099-74-8)	
LD50 oral rat	4665 mg/kg body weight (Rat; Equivalent or similar to OECD 401; Read-across; 5610 mg/kg bodyweight; Rat; Equivalent or similar to OECD 401; Read-across)
ATE US (oral)	4665.000 mg/kg body weight
thallium(I)nitrate (10102-45-1)	
ATE US (oral)	5.000 mg/kg body weight

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

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Safety Data Sheet

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

Carcinogenicity : Not classified

beryllium nitrate (13597-99-4)	
IARC group	1 - Carcinogenic to humans

cobalt dinitrate (10141-05-6)	
IARC group	2B - Possibly carcinogenic to humans

lead nitrate (10099-74-8)	
IARC group	2A - Probably carcinogenic to humans

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.

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)

barium nitrate (10022-31-8)	
LC50 fish 1	> 1000 mg/l (LC50; 96 h)

beryllium nitrate (13597-99-4)	
LC50 fish 1	8 mg/l (LC50)
EC50 Daphnia 1	18 mg/l (EC50; 24 h)
Threshold limit algae 1	0.03 mg/l (EC0)

cobalt dinitrate (10141-05-6)	
LC50 fish 1	0.490 mg/l (LC50; 672 h)
EC50 Daphnia 2	0.021 mg/l (EC50; 48 h)
Threshold limit algae 1	0.018 mg/l (EC50; 96 h)

lead nitrate (10099-74-8)	
EC50 Daphnia 1	0.3 mg/l (LC50; 48 h)
LC50 fish 2	7.48 mg/l (TLm; 96 h)
Threshold limit algae 1	0.14 mg/l (EC50)

thallium(I)nitrate (10102-45-1)	
LC50 fish 1	180 mg/l (LC50)
EC50 Daphnia 1	1.6 mg/l (EC50; 24 h)

12.2. Persistence and degradability

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

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Safety Data Sheet

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

nitric acid (7697-37-2)	
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
barium nitrate (10022-31-8)	
Persistence and degradability	Biodegradability: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
beryllium nitrate (13597-99-4)	
Persistence and degradability	Biodegradability: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
cobalt dinitrate (10141-05-6)	
Persistence and degradability	Biodegradability: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
lead nitrate (10099-74-8)	
Persistence and degradability	Biodegradability: Not applicable. Adsorbs into the soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
thallium(I)nitrate (10102-45-1)	
Persistence and degradability	Biodegradability: Not applicable. Adsorbs into the soil.
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.
barium nitrate (10022-31-8)	
Bioaccumulative potential	Not bioaccumulative.
beryllium nitrate (13597-99-4)	
Bioaccumulative potential	Not bioaccumulative.
cobalt dinitrate (10141-05-6)	
Bioaccumulative potential	Bioaccumulation: No data available.
lead nitrate (10099-74-8)	
Bioaccumulative potential	bioaccumulative.

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Safety Data Sheet

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

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

Not regulated

Air transport

Not regulated

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
SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb

barium nitrate (10022-31-8)

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

beryllium nitrate (13597-99-4)

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

CERCLA RQ	1 lb
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cobalt dinitrate (10141-05-6)

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

lead nitrate (10099-74-8)

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

CERCLA RQ	10 lb
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thallium(I)nitrate (10102-45-1)

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

CERCLA RQ

100 lb

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

Full text of H-phrases:

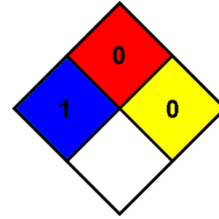
H272	May intensify fire; oxidizer
H290	May be corrosive to metals
H300	Fatal if swallowed
H301	Toxic if swallowed
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H341	Suspected of causing genetic defects
H350	May cause cancer
H351	Suspected of causing cancer
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

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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.