

**PlasmaCAL custom calibration standard for ICP-AES and ICP-MS**

Revision: 18.03.2024

Product code: AC18.08936

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**1. Identification**
**Product identifier**

PlasmaCAL custom calibration standard for ICP-AES and ICP-MS

**Relevant identified uses of the substance or mixture and uses advised against**
**Use of the substance/mixture**

 Reagents and laboratory chemicals  
 Only for laboratory and analysis purposes.

**Uses advised against**

Do not use for private purposes (household).

**Details of the supplier of the safety data sheet**
**Details of the supplier of the safety data sheet**

Company name: AnalytiChem Services, Unipessoal, Lda  
 Street: Rua de Júlio Dinis 676 7º  
 Place: P-4050-320 Porto  
 Telephone: +351 226002917  
 E-mail: info@analytichem.com  
 Contact person: SDS service department  
 E-mail: SDS@analytichem.com  
 Internet: www.analytichem.com  
 Responsible Department: SDS service department

**Supplier or manufacturer details**

Company name: AnalytiChem Canada Inc.  
 Québec, CANADA  
 Street: 21800 Clark Graham Ave  
 Place: CDN-H9X 4B6 Baie-D'Urfé  
 Telephone: +1 (800) 361-6820 Telefax: +1 (800) 253-5549  
 E-mail: info@analytichem.com  
 Contact person: SDS service department  
 E-mail: SDS@analytichem.com  
 Internet: www.analytichem.com  
 Responsible Department: AnalytiChem:  
 EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem, Belgium, +32 50 28 83 20  
 EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg, Germany, +49 203 51 94 – 200  
 EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG Mijdrecht, The Netherlands, +31 297 286848  
 UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester, OX26 4XB, England, +44 1869 355 500  
 USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States, +1 800-244-8378  
 Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X 4B6, Canada, +1 514-457-0701  
 Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater North, 3153, Australia, +61 3 9729 0333

**Emergency telephone number:**

+1 703-741-5970 (CHEMTREC)

**Further Information**

This product is a mixture. REACH Registration Number see section 3.

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**2. Hazard identification**

**Classification of the substance or mixture**

**Regulation (EC) No 1272/2008**

Met. Corr. 1; H290  
 Skin Irrit. 2; H315  
 Eye Irrit. 2; H319  
 STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

**Label elements**

**Regulation (EC) No 1272/2008**

**Hazard components for labelling**

Hydrochloric acid

**Signal word:** Warning

**Pictograms:**



**Hazard statements**

H290 May be corrosive to metals.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.

**Precautionary statements**

P302+P352 IF ON SKIN: Wash with plenty of water and soap.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Other hazards**

No data available

**3. Composition/information on ingredients**

**Mixtures**

**Chemical characterization**

Mixtures in aqueous solution

**Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
7647-01-0	Hydrochloric acid			10 - < 15 %
	231-595-7	017-002-01-X	01-2119484862-27	
	Met. Corr. 1, Skin Corr. 1B, Eye Dam. 1, STOT SE 3; H290 H314 H318 H335			

Full text of H statements: see section 16.

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**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7647-01-0	231-595-7	Hydrochloric acid	10 - < 15 %
		Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25 STOT SE 3; H335: >= 10 - 100	

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**4. First-aid measures**
**Description of first aid measures**
**General information**

No data available

**After inhalation**

Provide fresh air.  
Call a doctor if you feel unwell.

**After contact with skin**

Wash immediately with: Water  
Take off immediately all contaminated clothing and wash it before reuse.  
In case of skin irritation, consult a physician.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.  
Remove contact lenses, if present and easy to do. Continue rinsing.

**After ingestion**

Rinse mouth immediately and drink plenty of water.  
Call a physician immediately.

**Most important symptoms and effects, whether acute or delayed**

Irritant — skin irritation and eye damage  
Cough  
Dyspnoea

**Indication of immediate medical attention and special treatment needed**

No data available

**5. Fire-fighting measures**
**Extinguishing media**
**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

**Specific hazards arising from the hazardous product**

Non-combustible liquids  
Hazardous combustion products  
In case of fire may be liberated:  
Hydrochloric gas

**Special protective equipment and precautions for fire-fighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

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Avoid contact with skin, eyes and clothes.

**Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Use water spray jet to protect personnel and to cool endangered containers.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

**General advice**

Corrosive to metals.

**For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Consult an expert  
Do not breathe dust/fume/gas/mist/vapours/spray.

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

**Environmental precautions**

Do not allow to enter into surface water or drains.

**Methods and material for containment and cleaning up**

**For containment**

Cover drains.  
Prevent spread over a wide area (e.g. by containment or oil barriers).  
Collect in closed and suitable containers for disposal.  
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

**7. Handling and storage**

**Precautions for safe handling**

**Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used.  
Read label before use. Handle and open container with care.  
When using do not eat, drink, smoke, sniff. Keep container tightly closed.  
Use personal protection equipment. Use extractor hood (laboratory).  
Provide adequate ventilation. Do not inhale fog/steam/aerosol.  
Avoid contact with skin, eyes and clothes.

**Advice on protection against fire and explosion**

Usual measures for fire prevention.

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**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink. The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

**Further information on handling**

Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary.  
Take off immediately all contaminated clothing and wash it before reuse.

**Conditions for safe storage, including any incompatibilities**

**Requirements for storage rooms and vessels**

Keep container tightly closed.  
Provide adequate ventilation as well as local exhaust at critical locations.  
Keep in a cool place.

**Hints on joint storage**

Take national regulations into account.

**Further information on storage conditions**

Unsuitable container/equipment material: Metal

**Specific end use(s)**

Laboratory chemicals

**8. Exposure controls/Personal protection**

**Control parameters**

**Exposure limits (ACGIH)**

CAS No	Chemical name	ppm	mg/m <sup>3</sup>	Category	Origin
7647-01-0	Hydrogen chloride	2		Peak	ACGIH-2025

**DNEL/DMEL values**

CAS No	Chemical name	Exposure route	Effect	Value
7647-01-0	Hydrochloric acid			
Worker DNEL, long-term		inhalation	local	8 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	local	15 mg/m <sup>3</sup>
Consumer DNEL, long-term		inhalation	local	8 mg/m <sup>3</sup>
Consumer DNEL, acute		inhalation	local	15 mg/m <sup>3</sup>

**Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.  
If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Suitable eye protection:  
Face protection shield  
goggles.

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**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**Skin protection**

Wear suitable protective clothing.  
Protective clothing acid-resistant

**Respiratory protection**

Respiratory protection necessary at: aerosol or mist formation  
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Thermal hazards**

No data available

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**9. Physical and chemical properties**
**Information on basic physical and chemical properties**

Physical state:	Liquid	
Colour:	yellow	
Odour:	stinging	
Odour threshold:	No data available	
Melting point/freezing point:		No data available
Boiling point or initial boiling point and boiling range:		No data available
Flammability:		No data available
Lower explosive limits:		No data available
Upper explosive limits:		No data available
Flash point:		X
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value (at 20 °C):		<2
Viscosity / kinematic:		No data available
Water solubility:		easily soluble
Solubility in other solvents		
not determined		
Dissolution rate:		No data available
Partition coefficient n-octanol/water:		No data available
Dispersion stability:		No data available
Vapour pressure:		No data available
Vapour pressure:		No data available
Density (at 24 °C):		1,013 g/cm <sup>3</sup>
Relative density:		No data available
Bulk density:		No data available
Relative vapour density:		No data available
Particle characteristics:		No data available

**Other information**

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**Information with regard to physical hazard classes**

Explosive properties

No data available

Sustained combustibility:

No data available

Self-ignition temperature

Solid:

not applicable

Gas:

not applicable

Oxidizing properties

No data available

**Other safety characteristics**

Evaporation rate:

No data available

Solvent separation test:

No data available

Solvent content:

0%

Solid content:

0%

Sublimation point:

No data available

Softening point:

No data available

Pour point:

No data available

No data available:

Viscosity / dynamic:

No data available

Flow time:

No data available

**Further Information**

Corrosive to metals

**10. Stability and reactivity**

**Reactivity**

Corrosive to metals.

**Chemical stability**

The product is stable under storage at normal ambient temperatures.

**Possibility of hazardous reactions**

Alkali (lye)

**Conditions to avoid**

Heat

**Incompatible materials**

Keep away from: Metal.

The product develops hydrogen in an aqueous solution in contact with metals.

**Hazardous decomposition products**

In case of fire may be liberated:

SECTION 5: Firefighting measures

**Further information**

No data available

**11. Toxicological information**

**Information on toxicological effects**

**Toxicokinetics, metabolism and distribution**

There are no data available on the mixture itself.

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**Acute toxicity**

Based on available data, the classification criteria are not met.  
 Pulmonary oedema  
 Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.  
 Inhalation effect: Damage to the respiratory tract.

**ATEmix calculated**

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

**Irritation and corrosivity**

Skin corrosion/irritation: Causes skin irritation.  
 Serious eye damage/eye irritation: Causes serious eye irritation.

**Sensitizing effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Germ cell mutagenicity: Based on available data, the classification criteria are not met.  
 Carcinogenicity: Based on available data, the classification criteria are not met.  
 Reproductive toxicity: Based on available data, the classification criteria are not met.

**STOT-single exposure**

May cause respiratory irritation. (Hydrochloric acid)

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

There are no data available on the mixture itself.

**Specific effects in experiment on an animal**

There are no data available on the mixture itself.

**Additional information on tests**

There are no data available on the mixture itself.

**Practical experience**

There are no data available on the mixture itself.

**Information on other hazards**

**Endocrine disrupting properties**

There are no data available on the mixture itself.

**Other information**

There are no data available on the mixture itself.

**Further information**

Irritant — skin irritation and eye damage  
 Cough  
 Dyspnoea

**12. Ecological information**

**Ecotoxicity**

Based on available data, the classification criteria are not met.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
7647-01-0	Hydrochloric acid					
	Acute fish toxicity	LC50	862 mg/l	96 h	Leuciscus idus	

**Persistence and degradability**

There are no data available on the mixture itself.

**Bioaccumulative potential**

There are no data available on the mixture itself.

**Mobility in soil**

There are no data available on the mixture itself.

**Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

**Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**Other adverse effects**

- Discharge into the environment must be avoided.
- Harmful effect due to pH shift.
- Forms corrosive mixtures with water even if diluted.

**Further information**

Do not empty into drains.

**13. Disposal considerations**
**Waste treatment methods**
**Disposal recommendations**

- Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
- Send to a physico-chemical treatment facility under observation of official regulations.
- Do not empty into drains.

**Contaminated packaging**

- Handle contaminated packages in the same way as the substance itself.
- Waste codes/waste designations according to EWC/AVV

**14. Transport information**
**Land transport (ADR/RID)**

<b><u>UN number or ID number:</u></b>	UN 3264
<b><u>United Nations proper shipping name:</u></b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric acid)
<b><u>Transport hazard class(es):</u></b>	8
<b><u>Packing group:</u></b>	III
Hazard label:	8
Classification Code:	C1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	80
Tunnel restriction code:	E

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**Inland waterways transport (ADN)**

<b><u>UN number or ID number:</u></b>	UN 3264
<b><u>United Nations proper shipping name:</u></b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric acid)
<b><u>Transport hazard class(es):</u></b>	8
<b><u>Packing group:</u></b>	III
Hazard label:	8
Classification Code:	C1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1

**Marine transport (IMDG)**

<b><u>UN number or ID number:</u></b>	UN 3264
<b><u>United Nations proper shipping name:</u></b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric acid)
<b><u>Transport hazard class(es):</u></b>	8
<b><u>Packing group:</u></b>	III
Hazard label:	8
Special Provisions:	223 274
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-B
Segregation group:	1 - acids

**Air transport (ICAO-TI/IATA-DGR)**

<b><u>UN number or ID number:</u></b>	UN 3264
<b><u>United Nations proper shipping name:</u></b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric acid)
<b><u>Transport hazard class(es):</u></b>	8
<b><u>Packing group:</u></b>	III
Hazard label:	8
Special Provisions:	A3 A803
Limited quantity Passenger:	1 L
Passenger LQ:	Y841
Excepted quantity:	E1
IATA-packing instructions - Passenger:	852
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	856
IATA-max. quantity - Cargo:	60 L

**Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**15. Regulatory information**
**Safety, health and environmental regulations/legislation specific for the substance or mixture**
**EU Regulatory information**

 Restrictions on use (REACH, annex XVII):  
 Entry 3

Information according to Directive 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

**National regulatory information**

Employment restrictions: Observe employment restrictions for young people.

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Water hazard class (D): 1 - slightly hazardous to water

**16. Other information**
**Abbreviations and acronyms**

Met. Corr. 1: Corrosive to metals  
 Skin Corr. 1B: Skin corrosion  
 Skin Irrit. 2: Skin irritation  
 Eye Dam. 1: Serious eye damage  
 Eye Irrit. 2: Eye irritation  
 STOT SE 3: Specific target organ toxicity - single exposure  
 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  
 IATA: International Air Transport Association  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service  
 LC50: Lethal concentration, 50%  
 LD50: Lethal dose, 50%

**Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008**

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
STOT SE 3; H335	Calculation method

**Relevant H statements (number and full text)**

H290 May be corrosive to metals.  
 H314 Causes severe skin burns and eye damage.  
 H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. Provide appropriate information, instructions and training to users

*(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*