

**Safety Data Sheet**

according to WHMIS

**PlasmaCAL ICP/ICPMS Standard – Silver 10000 µg/ml (Ag)**

Revision: 03.03.2025

Product code: AC18.06387

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

PlasmaCAL ICP/ICPMS Standard – Silver 10000 µg/ml (Ag)

**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**

No data available

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## 2. Hazard identification

Classification of the substance or mixture

## WHMIS 2015

Corrosive to metals: Met. Corr. 1

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Label elements

## WHMIS 2015

Signal word: Danger

Pictograms:



## Hazard statements

May be corrosive to metals.

Causes severe skin burns and eye damage.

## Precautionary statements

Dispose of contents/container to hazardous or special waste collection point.

Keep only in original packaging.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wash hands thoroughly after handling.

Wear protective gloves/protective clothing and eye protection/face protection.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash contaminated clothing before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a POISON CENTER/doctor.

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.

Absorb spillage to prevent material damage.

Store locked up.

Store in a corrosion resistant container with a resistant inner liner.

Other hazards

No data available

## 3. Composition/information on ingredients

Mixtures

## Chemical characterization

Mixtures in aqueous solution

## Relevant ingredients

| CAS No    | Chemical name  | Quantity      |
|-----------|----------------|---------------|
| 7697-37-2 | nitric acid    | 1 - < 5 % (*) |
| 7761-88-8 | silver nitrate | 1 - < 5 % (*) |

(\*) The actual concentration is withheld as a trade secret.

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**Further Information**

No data available

**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.

Call a physician immediately.

**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.

Protect uninjured eye.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

Do NOT induce vomiting. Do not allow a neutralisation agent to be drunk.

Call a physician immediately.

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

Irritant

Cough

Dyspnoea

Vomiting

Methaemoglobinaemia

Risk of serious damage to eyes.

**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:

Nitrogen oxides (NO<sub>x</sub>)**Special protective equipment and precautions for fire-fighters**

In case of fire: Wear self-contained breathing apparatus.

In case of fire and/or explosion do not breathe fumes.

Avoid contact with skin, eyes and clothes.

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**Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Move undamaged containers from immediate hazard area if it can be done safely.  
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**

Read label before use. Handle and open container with care.  
When using do not eat, drink, smoke, sniff. Use personal protection equipment.  
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.  
Do not breathe vapour/aerosol.

**Advice on protection against fire and explosion**

Usual measures for fire prevention.

**Advice on general occupational hygiene**

Keep away from food, drink and animal feedingstuffs. Remove contaminated, saturated clothing immediately.

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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. Avoid: aerosol or mist formation Do not breathe vapour/aerosol.

**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**

Corrosive to metals.  
Unsuitable container/equipment material: Metal  
The product develops hydrogen in an aqueous solution in contact with metals.

**Hints on joint storage**

Take national regulations into account.

**Further information on storage conditions**

Keep container tightly closed.

**8. Exposure controls/Personal protection****Control parameters****Exposure limits (ACGIH)**

| CAS No    | Chemical name | ppm | mg/m <sup>3</sup> | Category      | Origin     |
|-----------|---------------|-----|-------------------|---------------|------------|
| 7697-37-2 | Nitric acid   | 2   | 5.2               | TWA (8 h)     | ACGIH-2025 |
|           |               | 4   | 10                | STEL (15 min) | ACGIH-2025 |

**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.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

goggles  
Wear eye/face protection.

**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. Take off immediately all contaminated clothing.  
Wash hands before breaks and after work.  
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.

**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.

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**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:                                                   | colourless        |                         |
| Odour:                                                    | odourless         |                         |
| 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:                                              |                   | No data available       |
| Auto-ignition temperature:                                |                   | No data available       |
| Decomposition temperature:                                |                   | No data available       |
| pH-Value:                                                 |                   | No data available       |
| Viscosity / kinematic:                                    |                   | No data available       |
| Water solubility:                                         |                   | completely miscible     |
| Solubility in other solvents                              |                   |                         |
| No data available                                         |                   |                         |
| 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 22 °C):                                       |                   | 1,032 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****Information with regard to physical hazard classes**

## Explosive properties

No data available

## Sustained combustibility:

No data available

## Self-ignition temperature

Solid:

No data available

Gas:

No data available

## Oxidizing properties

Oxidizing

**Other safety characteristics**

## Evaporation rate:

No data available

## Solvent separation test:

No data available

## Solvent content:

0

## Solid content:

0

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|                      |                   |
|----------------------|-------------------|
| 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.  
Oxidising agent

**Chemical stability**

The product is stable under storage at normal ambient temperatures.

**Possibility of hazardous reactions**

Alkali (lye)  
The product develops hydrogen in an aqueous solution in contact with metals.  
Amines, Ammonia, Alcohols, Alkali metals, Hydrogen peroxide  
Copper, Combustible solids, Solvent, Alkaline earth metal, mercury (Hg).

**Conditions to avoid**

No data available

**Incompatible materials**

Cellulose  
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.

**Acute toxicity**

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

**ATEmix calculated**

ATE (oral) > 5000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 50 mg/l; ATE (inhalation dust/mist) > 5 mg/l

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| CAS No    | Chemical name     |                   |            |                                          |                    |
|-----------|-------------------|-------------------|------------|------------------------------------------|--------------------|
|           | Route of exposure | Dose              | Species    | Source                                   | Method             |
| 7697-37-2 | nitric acid       |                   |            |                                          |                    |
|           | inhalation vapour | ATE 2,65 mg/l     |            |                                          |                    |
| 7761-88-8 | silver nitrate    |                   |            |                                          |                    |
|           | oral              | LD50 > 2000 mg/kg | Rat        | Study report (1993)                      | OECD Guideline 401 |
|           | dermal            | LD50 > 348 mg/kg  | Guinea pig | J. Vet. Med. Sci.73: 1417 - 1423. (2011) | OECD Guideline 434 |

**Irritation and corrosivity**

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/eye irritation: Causes serious eye damage.

Following ingestion Gastric perforation

Irritating to respiratory system.

Pulmonary oedema

Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.

see also Section 4

**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**

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

**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**

There are no data available on the mixture itself.

**12. Ecological information****Ecotoxicity**



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| CAS No    | Chemical name            |                      |           |                                                    |                                          |                                          |
|-----------|--------------------------|----------------------|-----------|----------------------------------------------------|------------------------------------------|------------------------------------------|
|           | Aquatic toxicity         | Dose                 | [h]   [d] | Species                                            | Source                                   | Method                                   |
| 7697-37-2 | nitric acid              |                      |           |                                                    |                                          |                                          |
|           | Acute fish toxicity      | LC50 1559 mg/l       | 96 h      | Topeka shiner                                      | Environmental Toxicology and Chemistry,  | other: ASTM E729-26                      |
|           | Fish toxicity            | NOEC 268 mg/l        | 30 d      | juvenile Topeka shiner and with juvenile Fathead m | Study report (2009)                      | Growth tests estimated the test chemical |
|           | Algae toxicity           | NOEC > 419 mg/l      | 10 d      | several benthic diatoms; see results               | Marine Biology 43:307-315 (1977)         | Ten cultures of benthic diatoms were iso |
|           | Acute bacteria toxicity  | EC50 > 1000 mg/l ( ) | 3 h       | Activated sludge                                   | Study report (2008)                      | OECD Guideline 209                       |
| 7761-88-8 | silver nitrate           |                      |           |                                                    |                                          |                                          |
|           | Acute fish toxicity      | LC50 0,0012 mg/l     | 96 h      | Pimephales promelas                                | Environmental Toxicology and Chemistry,  | A guideline was not specified. The test  |
|           | Acute algae toxicity     | ErC50 0,0099 mg/l    | 96 h      | Pseudokirchneriella subcapitata                    | Environmental Science and Technology. 44 | eline: U.S. Environmental Protection Age |
|           | Acute crustacea toxicity | EC50 0,00022 mg/l    | 48 h      | Daphnia magna                                      | Environmental Toxicology and Chemistry,  | The protective effect of reactive sulphi |
|           | Fish toxicity            | NOEC > 0,00125 mg/l  | 73 d      | Oncorhynchus mykiss                                | Environmental Toxicology and Chemistry 2 | other: ASTM 1241-98                      |
|           | Algae toxicity           | NOEC 0,0012 mg/l     | 14 d      | Champia parvula                                    | in Bishop WE, Cardwell RD Heidolph BB (E | The toxicity tests lasted 11 days for th |
|           | Crustacea toxicity       | NOEC 0,00031 mg/l    | 20 d      | Isonychia bicolor                                  | Environmental Toxicology and Chemistry,  | 20 day sublethal effects on representati |

**Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

**Bioaccumulative potential**

There are no data available on the mixture itself.

**BCF**

| CAS No    | Chemical name  | BCF | Species         | Source              |
|-----------|----------------|-----|-----------------|---------------------|
| 7761-88-8 | silver nitrate | 70  | Cyprinus carpio | Water, Air and Soil |

**Mobility in soil**

There are no data available on the mixture itself.

**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.

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**Further information**

Do not allow to enter into surface water or 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**
**Canadian TDG**

|                                     |                                                          |
|-------------------------------------|----------------------------------------------------------|
| <b><u>UN number:</u></b>            | UN 3264                                                  |
| <b><u>Proper shipping name:</u></b> | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(nitric acid) |
| <b><u>Hazard classes:</u></b>       | 8                                                        |
| <b><u>Packing group:</u></b>        | III                                                      |
| Hazard label:                       | 8                                                        |
| Limited quantity:                   | 5 L                                                      |

**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.(nitric 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.(nitric 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**

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ENVIRONMENTALLY HAZARDOUS: Yes  
Danger releasing substance: silver nitrate

**15. Regulatory information****Canadian regulations****16. Other information****Further Information**

Provide appropriate information, instructions and training to users

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.

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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