

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

Revision date: 12/08/2023

Product code: AC18.09066

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2. Hazard(s) identification

Classification of the chemical

Regulation (EC) No 1272/2008

Met. Corr. 1; H290
 Skin Corr. 1B; H314
 Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling
 nitric acid

Signal word: Danger

Pictograms:



Hazard statements

H290 May be corrosive to metals
 H314 Causes severe skin burns and eye damage
 EUH071 Corrosive to the respiratory tract.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
 P280 Wear protective gloves/protective clothing and eye protection/face protection.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.
 P310 Immediately call a poison center/doctor.

Hazards not otherwise classified

No data available

3. Composition/information on ingredients

Mixtures

Chemical characterization

Mixtures in aqueous solution

Relevant ingredients

CAS No	Components			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
7697-37-2	nitric acid			5 - < 10 %
	231-714-2	007-030-00-3	01-2119487297-23	
	Ox. Liq. 3, Met. Corr. 1, Acute Tox. 3, Skin Corr. 1A, Eye Dam. 1; H272 H290 H331 H314 H318 EUH071			

Full text of H and EUH statements: see section 16.

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Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Components	Quantity
		Specific Conc. Limits, M-factors and ATE	
7697-37-2	231-714-2	nitric acid	5 - < 10 %
		inhalation: ATE 2,65 mg/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 - 100 Skin Corr. 1B; H314: >= 5 - < 20	

Further Information

No data available

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

First aider: Pay attention to self-protection!

After inhalation

Provide fresh air.

Call a physician immediately.

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, both acute and delayed

Causes burns.

Irritant

Cough

Dyspnoea

Vomiting

Methaemoglobinaemia

Risk of serious damage to eyes.

Indication of any 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 chemical

Non-combustible liquids

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Hazardous combustion products
 In case of fire may be liberated:
 Nitrogen oxides (NOx)

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.

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/vapors/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment (PPE): 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/vapors/spray.
 Wear breathing apparatus if exposed to vapors/dusts/aerosols.

Reference to other sections

Safe handling: see section 7
 Personal protection equipment (PPE): 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.

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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 vapor or spray.

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.

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 vapor or spray.

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.

Specific end use(s)

Laboratory chemicals

8. Exposure controls/personal protection
Control parameters
Exposure limits

CAS No	Substance	ppm	mg/m ³	Category	Origin
7697-37-2	Nitric acid	2	5	TWA (8 h)	PEL
		2	5	TWA (8 h)	REL
		4	10	STEL (15 min)	REL
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

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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 the protective agents should 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. A respiratory protection program that meets OSHA's 29 CFR 1910.134 requirements must be followed whenever workplace conditions warrant a respirator's use.

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	
Color:	clear	
Odor:	like: Nitric acid	
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 explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		No data available
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value (at 20 °C):		<2
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
Vapor pressure:		No data available
Vapor pressure:		No data available
Density:		No data available
Relative density:		No data available
Bulk density:		No data available
Relative vapour density:		No data available
Particle characteristics:		No data available

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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

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: Fire fighting measures

Further information

No data available

11. Toxicological information

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

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
7697-37-2	nitric acid				
	inhalation vapour	ATE 2,65 mg/l			

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage
 Serious eye damage/eye irritation: Causes serious eye damage
 Corrosive to the respiratory tract.
 Following ingestion Gastric perforation
 Irritating to respiratory system.
 Pulmonary oedema
 Mucous membrane irritations 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.

Specific target organ toxicity (STOT) - single exposure

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

Specific target organ toxicity (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.

Route(s) of Entry

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.

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Further information

There are no data available on the mixture itself.

12. Ecological information
Ecotoxicity

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

CAS No	Components					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
7697-37-2	nitric acid					
	Acute fish toxicity	LC50 mg/l	1559	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

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.

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 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

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14. Transport information
Land transport (ADR/RID)

<u>UN number or ID number:</u>	UN 3264
<u>UN proper shipping name:</u>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)
<u>Transport hazard class(es):</u>	8
<u>Packing group:</u>	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

Inland waterways transport (ADN)

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

Marine transport (IMDG)

<u>UN number or ID number:</u>	UN 3264
<u>UN proper shipping name:</u>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)
<u>Transport hazard class(es):</u>	8
<u>Packing group:</u>	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)

<u>UN number or ID number:</u>	UN 3264
<u>UN proper shipping name:</u>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)
<u>Transport hazard class(es):</u>	8
<u>Packing group:</u>	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: 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, Entry 75

Marketing and use of explosives precursors:

Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

National regulatory information

Employment restrictions:

Observe employment restrictions for young people.

Water hazard class (D):

1 - slightly hazardous to water

16. Other information
Abbreviations and acronyms

Ox. Liq. 3: Oxidizing liquids

Met. Corr. 1: Corrosive to metals

Acute Tox. 3: Acute toxicity

Skin Corr. 1A: Skin corrosion

Skin Corr. 1B: Skin corrosion

Eye Dam. 1: Eye damage

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 Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method

Relevant H statements (full text)

H272	May intensify fire; oxidizer
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled
EUH071	Corrosive to the respiratory tract.

Other data

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.

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