

SAFETY DATA SHEET

pCO2 Electrode

SDS no.:

476247

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : pCO2 Electrode
Product code : 476247, 10317498

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses pCO2 Electrolyte Solution Diagnostic agents.
Restrictions on use For professional users only.

Supplier : Siemens Healthcare Diagnostics Limited
 Park View,
 Watchmoor Park,
 Camberley,
 Surrey,
 GU15 3YL
 United Kingdom

Phone: +44 (0) 345 600 1955

e-mail address of person responsible for this SDS : dx.msds.healthcare@siemens-healthineers.com

1.4 Emergency telephone number

CHEMTREC: +44 20 3807 3798

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : pCO2 Electrolyte Solution Mixture

Classification according to UK CLP/GHS

Not classified.

The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
 See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : pCO2 Electrolyte Solution No signal word.
Hazard statements : pCO2 Electrolyte Solution No known significant effects or critical hazards.

Precautionary statements

Prevention : pCO2 Electrolyte Solution Not applicable.
Response : pCO2 Electrolyte Solution Not applicable.
Storage : pCO2 Electrolyte Solution Not applicable.
Disposal : pCO2 Electrolyte Solution Not applicable.
Supplemental label elements : pCO2 Electrolyte Solution Safety data sheet available on request.

pCO₂ Electrode**SECTION 2: Hazards identification**

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : pCO₂ Electrolyte Solution Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : pCO₂ Electrolyte Solution This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : pCO₂ Electrolyte Solution None known.

Additional information : Not available.
Not available.

SECTION 3: Composition/information on ingredients

3.1 Substances : pCO₂ Electrolyte Solution Mixture

Product/ingredient name	Identifiers	%	Classification	Type
pCO ₂ Electrolyte Solution ethanediol	EC: 203-473-3 CAS: 107-21-1 Index: 603-027-00-1	≤3	Acute Tox. 4, H302 See Section 16 for the full text of the H statements declared above.	[1] [2]

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures**

Eye contact : pCO₂ Electrolyte Solution Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : pCO₂ Electrolyte Solution Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : pCO₂ Electrolyte Solution Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : pCO₂ Electrolyte Solution Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

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SECTION 4: First aid measures

Protection of first-aiders : pCO2 Electrolyte Solution No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact	: pCO2 Electrolyte Solution	No specific data.
Inhalation	: pCO2 Electrolyte Solution	No specific data.
Skin contact	: pCO2 Electrolyte Solution	No specific data.
Ingestion	: pCO2 Electrolyte Solution	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: pCO2 Electrolyte Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: pCO2 Electrolyte Solution pCO2 Electrolyte Solution	No specific treatment. Not available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

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SECTION 6: Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
pCO2 Electrolyte Solution ethanediol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. TWA: 10 mg/m ³ 8 hours. Form: Particulate TWA: 20 ppm 8 hours. Form: Vapour STEL: 40 ppm 15 minutes. Form: Vapour TWA: 52 mg/m ³ 8 hours. Form: Vapour STEL: 104 mg/m ³ 15 minutes. Form: Vapour

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

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SECTION 9: Physical and chemical properties

Softening point	:	Not relevant/applicable due to nature of the product.
Sublimation temperature	:	Not relevant/applicable due to nature of the product.
Initial boiling point and boiling range	:	pCO2 Electrolyte Solution Not available.
Flammability (solid, gas)	:	pCO2 Electrolyte Solution Not relevant/applicable due to nature of the product.
Upper/lower flammability or explosive limits	:	pCO2 Electrolyte Solution Not available.
Flash point	:	pCO2 Electrolyte Solution [Product does not sustain combustion.]

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
pCO2 Electrolyte Solution ethanediol	111	231.8				

Auto-ignition temperature :

Ingredient name	°C	°F	Method
pCO2 Electrolyte Solution ethanediol	398	748.4	

Decomposition temperature	:	Not relevant/applicable due to nature of the product.
pH	:	pCO2 Electrolyte Solution Not applicable.
Viscosity	:	pCO2 Electrolyte Solution Not available.
Solubility(ies)	:	Not available.

Solubility in water	:	Not relevant/applicable due to nature of the product.
Miscible with water	:	Not relevant/applicable due to nature of the product.
Partition coefficient: n-octanol/ water	:	Not relevant/applicable due to nature of the product.

Vapour pressure :

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
pCO2 Electrolyte Solution sodium hydrogencarbonate	0.5	0.067	EU A.4			

Evaporation rate	:	Not relevant/applicable due to nature of the product.
Relative density	:	pCO2 Electrolyte Solution 1.02
Density	:	pCO2 Electrolyte Solution Not available.
Vapour density	:	pCO2 Electrolyte Solution Not available.
Explosive properties	:	pCO2 Electrolyte Solution Not available.
Oxidising properties	:	pCO2 Electrolyte Solution Not available.
Particle characteristics	:	
Median particle size	:	Not applicable.

9.2 Other information

Fire point	:	pCO2 Electrolyte Solution Not available.
Burning time	:	Not relevant/applicable due to nature of the product.
Fundamental burning velocity	:	Not relevant/applicable due to nature of the product.
Burning rate	:	Not relevant/applicable due to nature of the product.
SADT	:	Not relevant/applicable due to nature of the product.
SAPT	:	Not relevant/applicable due to nature of the product.

pCO₂ Electrode**SECTION 9: Physical and chemical properties**

Heat of reaction	: Not relevant/applicable due to nature of the product.
Heat of combustion	: Not relevant/applicable due to nature of the product.
Flow time (ISO 2431)	: Not relevant/applicable due to nature of the product.
Molecular weight	: Not relevant/applicable due to nature of the product.

SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: No specific data.
10.5 Incompatible materials	: No specific data.
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**

Product/ingredient name	Result	Species	Dose	Exposure
pCO ₂ Electrolyte Solution ethanediol	LD50 Oral	Rat	4700 mg/kg	-

Conclusion/Summary : pCO₂ Electrolyte Solution Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
pCO ₂ Electrolyte Solution pCO ₂ Electrolyte Solution ethanediol	46382.2 500	N/A N/A	N/A N/A	N/A N/A	N/A N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
pCO ₂ Electrolyte Solution ethanediol	Eyes - Mild irritant	Rabbit	-	1 hours 100 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	6 hours 1440 mg	-
	Skin - Mild irritant	Rabbit	-	555 mg	-

Conclusion/Summary

Skin	: pCO ₂ Electrolyte Solution	Not available.
Eyes	: pCO ₂ Electrolyte Solution	Not available.
Respiratory	: pCO ₂ Electrolyte Solution	Not available.

Sensitisation**Conclusion/Summary**

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SECTION 11: Toxicological information

Skin : pCO2 Electrolyte Solution Not available.
Respiratory : pCO2 Electrolyte Solution Not available.

Mutagenicity

Conclusion/Summary : pCO2 Electrolyte Solution Not available.

Carcinogenicity

Conclusion/Summary : pCO2 Electrolyte Solution Not available.

Reproductive toxicity

Conclusion/Summary : pCO2 Electrolyte Solution Not available.

Teratogenicity

Conclusion/Summary : pCO2 Electrolyte Solution Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : pCO2 Electrolyte Solution Not available.

Potential acute health effects

Eye contact : pCO2 Electrolyte Solution No known significant effects or critical hazards.
Inhalation : pCO2 Electrolyte Solution No known significant effects or critical hazards.
Skin contact : pCO2 Electrolyte Solution No known significant effects or critical hazards.
Ingestion : pCO2 Electrolyte Solution No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : pCO2 Electrolyte Solution No specific data.
Inhalation : pCO2 Electrolyte Solution No specific data.
Skin contact : pCO2 Electrolyte Solution No specific data.
Ingestion : pCO2 Electrolyte Solution No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : pCO2 Electrolyte Solution Not available.
Potential delayed effects : pCO2 Electrolyte Solution Not available.

Long term exposure

Potential immediate effects : pCO2 Electrolyte Solution Not available.
Potential delayed effects : pCO2 Electrolyte Solution Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : pCO2 Electrolyte Solution Not available.
General : pCO2 Electrolyte Solution No known significant effects or critical hazards.

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SECTION 11: Toxicological information

Carcinogenicity	: pCO2 Electrolyte Solution	No known significant effects or critical hazards.
Mutagenicity	: pCO2 Electrolyte Solution	No known significant effects or critical hazards.
Reproductive toxicity	: pCO2 Electrolyte Solution	No known significant effects or critical hazards.
Interactive effects	: pCO2 Electrolyte Solution	Not available.
Toxicokinetics		
Absorption	: pCO2 Electrolyte Solution	Not available.
Distribution	: pCO2 Electrolyte Solution	Not available.
Metabolism	: pCO2 Electrolyte Solution	Not available.
Elimination	: pCO2 Electrolyte Solution	Not available.
Other information	: pCO2 Electrolyte Solution	Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
pCO2 Electrolyte Solution ethanediol	Acute LC50 6900000 µg/l Fresh water	Crustaceans - Water flea - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 41000 mg/l Fresh water	Daphnia - Water flea - Daphnia magna - Neonate	48 hours
	Acute LC50 8050000 µg/l Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours

Conclusion/Summary : pCO2 Electrolyte Solution Not available.

12.2 Persistence and degradability

Conclusion/Summary : pCO2 Electrolyte Solution Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
pCO2 Electrolyte Solution ethanediol	-1.36	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : pCO2 Electrolyte Solution Not available.

Mobility : pCO2 Electrolyte Solution Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects : No known significant effects or critical hazards.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

ADR/RID

14.1 UN number pCO2 Electrolyte Solution Not regulated.

14.2 UN proper shipping name pCO2 Electrolyte Solution -

14.3 Transport hazard class(es) pCO2 Electrolyte Solution -

14.4 Packing group pCO2 Electrolyte Solution -

14.5 Environmental hazards pCO2 Electrolyte Solution No.

Additional information pCO2 Electrolyte Solution -

ADN

14.1 UN number pCO2 Electrolyte Solution Not regulated.

14.2 UN proper shipping name pCO2 Electrolyte Solution -

14.3 Transport hazard class(es) pCO2 Electrolyte Solution -

14.4 Packing group pCO2 Electrolyte Solution -

14.5 Environmental hazards pCO2 Electrolyte Solution No.

Additional information pCO2 Electrolyte Solution -

IMDG

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SECTION 14: Transport information

14.1 UN number	pCO2 Electrolyte Solution	Not regulated.
14.2 UN proper shipping name	pCO2 Electrolyte Solution	-
14.3 Transport hazard class(es)	pCO2 Electrolyte Solution	-
14.4 Packing group	pCO2 Electrolyte Solution	-
14.5 Environmental hazards	pCO2 Electrolyte Solution	No.
Additional information	pCO2 Electrolyte Solution	-

IATA

14.1 UN number	pCO2 Electrolyte Solution	Not regulated.
14.2 UN proper shipping name	pCO2 Electrolyte Solution	-
14.3 Transport hazard class(es)	pCO2 Electrolyte Solution	-
14.4 Packing group	pCO2 Electrolyte Solution	-
14.5 Environmental hazards	pCO2 Electrolyte Solution	No.
Additional information	pCO2 Electrolyte Solution	-

14.6 Special precautions for user : pCO2 Electrolyte Solution user

Transport within user's premises:
always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

UK (GB) /REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

pCO2 Electrode

SECTION 15: Regulatory information

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : pCO2 Electrolyte Solution Not applicable.

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : pCO2 Electrolyte Solution Not listed

Industrial emissions (integrated pollution prevention and control) - Water : pCO2 Electrolyte Solution Not listed

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment : Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

🔍 Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = GB CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- SGG = Segregation Group
- vPvB = Very Persistent and Very Bioaccumulative

pCO2 Electrode

SECTION 16: Other information

Procedure used to derive the classification

Not classified.

Full text of abbreviated H statements

pCO2
Electrolyte
Solution
H302 Harmful if swallowed.

Full text of classifications

pCO2 Electrolyte
Solution
Acute Tox. 4 ACUTE TOXICITY - Category 4

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Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.