acc. to OSHA HCS

Printing date 09/20/2018 *Review date 09/20/2018*

1 Identification

· **Product identifier**

· **Trade name: STD-COLD PLASMA OPTIMIZATION SOL**
· **Article number** N8151032
· **Application of the substance / the mixture** Laboratory chemicals

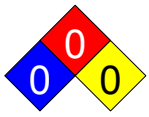
· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

2 Hazard(s) identification

· **Classification of the substance or mixture**
The product is not classified, according to the Globally Harmonized System (GHS).

· **Label elements**
· **GHS label elements** Void
· **Hazard pictograms** Void
· **Signal word** Void
· **Hazard statements** Void
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 0
Fire = 0
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

(Contd. on page 2)

acc. to OSHA HCS

Printing date 09/20/2018 *Review date 09/20/2018*

Trade name: STD-COLD PLASMA OPTIMIZATION SOL

(Contd. of page 1)

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.
· **Hazardous components:** Void

· **Additional Components**			
7697-37-2	Nitric Acid	Ox. Liq. 2, H272 Skin Corr. 1A, H314	0.1%
7440-46-2	Cesium nitrate		0.0001%
7440-74-6	Indium		0.0001%
7439-93-2	lithium	Water-react. 1, H260 Skin Corr. 1B, H314	0.0001%
7439-92-1	lead	Acute Tox. 3, H301 Carc. 2, H351; Repr. 1A, H360-H362 Acute Tox. 4, H332	0.0001%
7440-17-7	rubidium	Water-react. 1, H260 Skin Corr. 1B, H314; Eye Dam. 1, H318	0.0001%
7440-48-4	cobalt	Resp. Sens. 1, H334; Carc. 2, H351 Skin Sens. 1, H317	0.0001%
7732-18-5	Water		99.8994%

4 First-aid measures

· **Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:** If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.

(Contd. on page 3)

acc. to OSHA HCS

Printing date 09/20/2018 *Review date 09/20/2018*

Trade name: STD-COLD PLASMA OPTIMIZATION SOL

(Contd. of page 2)

· **Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.*
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
7697-37-2	Nitric Acid	0.16 ppm
7440-74-6	Indium	0.3 mg/m³
7439-93-2	lithium	3.3 mg/m³
7439-92-1	lead	0.15 mg/m³
7440-17-7	rubidium	3.9 mg/m³
7440-48-4	cobalt	0.18 mg/m³

· **PAC-2:**		
7697-37-2	Nitric Acid	24 ppm
7440-74-6	Indium	3.3 mg/m³
7439-93-2	lithium	36 mg/m³
7439-92-1	lead	120 mg/m³
7440-17-7	rubidium	43 mg/m³
7440-48-4	cobalt	2 mg/m³

· **PAC-3:**		
7697-37-2	Nitric Acid	92 ppm
7440-74-6	Indium	20 mg/m³
7439-93-2	lithium	220 mg/m³
7439-92-1	lead	700 mg/m³
7440-17-7	rubidium	260 mg/m³
7440-48-4	cobalt	20 mg/m³

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** *No special measures required.*
· **Information about protection against explosions and fires:** *No special measures required.*

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** *No special requirements.*
· **Information about storage in one common storage facility:** *Not required.*
· **Further information about storage conditions:** *None.*
· **Specific end use(s)** *No further relevant information available.*

(Contd. on page 4)

acc. to OSHA HCS

Printing date 09/20/2018 *Review date 09/20/2018*

Trade name: STD-COLD PLASMA OPTIMIZATION SOL

(Contd. of page 3)

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
· **Breathing equipment:** Not required.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Goggles recommended during refilling.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Dark brown
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.

(Contd. on page 5)

acc. to OSHA HCS

Printing date 09/20/2018 *Review date 09/20/2018*

Trade name: STD-COLD PLASMA OPTIMIZATION SOL

(Contd. of page 4)

· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)
· **Density:**	Not determined.
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Water:	99.9 %
VOC content:	0.00 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

(Contd. on page 6)

(Contd. of page 5)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
7439-92-1	lead	2B
7440-48-4	cobalt	2B

· **NTP (National Toxicology Program)**		
7439-92-1	lead	R
7440-48-4	cobalt	R

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:** Not hazardous for water.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:** Smaller quantities can be disposed of with household waste.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**
· **DOT, ADR, ADN, IMDG, IATA** Void

· **UN proper shipping name**
· **DOT, ADR, ADN, IMDG, IATA** Void

· **Transport hazard class(es)**

· **DOT, ADR, ADN, IMDG, IATA**
· **Class** Void

(Contd. on page 7)

acc. to OSHA HCS

Printing date 09/20/2018 *Review date 09/20/2018*

Trade name: STD-COLD PLASMA OPTIMIZATION SOL

(Contd. of page 6)

· **Packing group** · **DOT, ADR, IMDG, IATA**	*Void*
· **Environmental hazards:**	*Not applicable.*
· **Special precautions for user**	*Not applicable.*
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	*Not applicable.*
· **UN "Model Regulation":**	*Non regulated according to above specifications.* *Void*

15 Regulatory information

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

7732-18-5	Water		99.8994%
7697-37-2	Nitric Acid	Ox. Liq. 2, H272 Skin Corr. 1A, H314	0.1%
7440-74-6	Indium		0.0001%

· **Sara**

· **Section 355 (extremely hazardous substances):**

7697-37-2	Nitric Acid

· **Section 313 (Specific toxic chemical listings):**

7697-37-2	Nitric Acid
7439-92-1	lead
7440-48-4	cobalt

· **TSCA (Toxic Substances Control Act):**

7697-37-2	Nitric Acid
7440-74-6	Indium
7439-93-2	lithium
7439-92-1	lead
7440-17-7	rubidium
7440-48-4	cobalt
7732-18-5	Water

· **Proposition 65**

· **Chemicals known to cause cancer:**

7439-92-1	lead
7440-48-4	cobalt

· **Chemicals known to cause reproductive toxicity for females:**

7439-92-1	lead

· **Chemicals known to cause reproductive toxicity for males:**

7439-92-1	lead

(Contd. on page 8)

acc. to OSHA HCS

Printing date 09/20/2018 *Review date 09/20/2018*

Trade name: STD-COLD PLASMA OPTIMIZATION SOL

(Contd. of page 7)

· **Chemicals known to cause developmental toxicity:**

7439-92-1	lead

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

7439-92-1	lead	B2

· **TLV (Threshold Limit Value established by ACGIH)**

7439-92-1	lead	A3
7440-48-4	cobalt	A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Generally not hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** Environmental, Health and Safety
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **Abbreviations and acronyms:**
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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health

(Contd. on page 9)

acc. to OSHA HCS

Printing date 09/20/2018 *Review date 09/20/2018*

Trade name: STD-COLD PLASMA OPTIMIZATION SOL

(Contd. of page 8)

TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit