

Product code	Description
<b>2200200</b>	<b>Alkali-Cation Yeast Transformation Kit</b>

## Components:

2200201	TE
2200202	Lithium/Cesium Acetate
2200203	PEG
2200204	TE/Cation MIXX
2200206	SOS
2200207	Histamine Solution
2200205	Carrier DNA

## 1 Identification

- **Product identifier**
- **Trade name:** TE
- **Article number:** 2200201
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 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)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**  
Mixture of substances listed below with nonhazardous additions.  
Mixture: consisting of the following components.
- **Dangerous components:** Void

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## 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:** Flush eyes with running water as a precaution.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for 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**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- **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:**

1185-53-1	Tris Hydrochloride	12 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	0.5 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid	4.1 mg/m <sup>3</sup>

- **PAC-2:**

1185-53-1	Tris Hydrochloride	130 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	5 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid	45 mg/m <sup>3</sup>

- **PAC-3:**

1185-53-1	Tris Hydrochloride	790 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	50 mg/m <sup>3</sup>

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60-00-4 Ethylenediamine Tetraacetic Acid, Free Acid

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200 mg/m3

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special requirements.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Further information about storage conditions:**
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see Section 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.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
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 through 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:**

<b>Form:</b>	Liquid
<b>Color:</b>	According to product specification
<b>Odor:</b>	Indeterminate

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· <b>Odor threshold:</b>	Not determined.
· <b>pH-value:</b>	Not determined.
· <b>Change in condition</b> <b>Boiling point/Boiling range:</b>	Undetermined.
· <b>Flash point:</b>	Not applicable.
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	See section 10
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not Applicable
<b>Upper:</b>	Not Applicable
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density:</b>	Not Applicable
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with</b> <b>Water:</b>	Not Determined Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	98.7 %
<b>VOC content:</b>	0.0 g/l / 0.00 lb/gl
<b>Solids content:</b>	1.0 %
· <b>Other information</b>	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.

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Trade name: TE

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## 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:** Based on available data, the classification criteria are not met.

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** Irritant and potentially harmful

- **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.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **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:** Generally 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:**

Can not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Discard must be made according to official regulations.

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Trade name: TE

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## 14 Transport information

<b>· UN-Number</b>	
<b>· DOT, ADR, ADN, IMDG, IATA</b>	Not regulated
<b>· UN proper shipping name</b>	
<b>· DOT, ADR, ADN, IMDG, IATA</b>	Not regulated
<b>· Transport hazard class(es)</b>	
<b>· DOT, ADR, ADN, IMDG, IATA</b>	
<b>· Class</b>	Not regulated
<b>· Packing group</b>	
<b>· DOT, ADR, IMDG, IATA</b>	Not regulated
<b>· Environmental hazards:</b>	
<b>· Marine pollutant:</b>	No
<b>· Special precautions for user</b>	Not applicable.
<b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>· UN "Model Regulation":</b>	Not regulated

## 15 Regulatory information

<b>· Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
<b>· Sara</b>	
<b>· Section 355 (extremely hazardous substances):</b>	None of the ingredients is listed.
<b>· Section 313 (Specific toxic chemical listings):</b>	None of the ingredients is listed.
<b>· TSCA (Toxic Substances Control Act):</b>	All ingredients are listed.
<b>· Proposition 65</b>	
<b>· Chemicals known to cause cancer:</b>	None of the ingredients is listed.
<b>· Chemicals known to cause reproductive toxicity for females:</b>	None of the ingredients is listed.
<b>· Chemicals known to cause reproductive toxicity for males:</b>	None of the ingredients is listed.
<b>· Chemicals known to cause developmental toxicity:</b>	None of the ingredients is listed.
<b>· Carcinogenic categories</b>	
<b>· EPA (Environmental Protection Agency)</b>	None of the ingredients is listed.
<b>· TLV (Threshold Limit Value established by ACGIH)</b>	None of the ingredients is listed.

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

None of the ingredients is listed.

· **GHS label elements** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Quality Control Dept.

· **Date of preparation / last revision** 07/11/2017 / -

· **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

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit



## 1 Identification

- **Product identifier**
- **Trade name:** Lithium/Cesium Acetate
- **Article number:** 2200202
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 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)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**  
Mixture of substances listed below with nonhazardous additions.  
Mixture: consisting of the following components.
- **Dangerous components:** Void

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Trade name: Lithium/Cesium Acetate

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## 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:** Flush eyes with running water as a precaution.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for 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**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- **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:**

6108-17-4	LITHIUM ACETATE DIHYDRATE	3.2 mg/m <sup>3</sup>
1185-53-1	Tris Hydrochloride	12 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	0.5 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid	4.1 mg/m <sup>3</sup>
7647-17-8	Cesium Chloride	21 mg/m <sup>3</sup>

- **PAC-2:**

6108-17-4	LITHIUM ACETATE DIHYDRATE	36 mg/m <sup>3</sup>
1185-53-1	Tris Hydrochloride	130 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	5 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid	45 mg/m <sup>3</sup>
7647-17-8	Cesium Chloride	230 mg/m <sup>3</sup>

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Trade name: *Lithium/Cesium Acetate*

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· PAC-3:		
6108-17-4	LITHIUM ACETATE DIHYDRATE	210 mg/m <sup>3</sup>
1185-53-1	Tris Hydrochloride	790 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	50 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid	200 mg/m <sup>3</sup>
7647-17-8	Cesium Chloride	400 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** *No special measures required.*
- **Information about protection against explosions and fires:** *No special requirements.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** *15-30 °C*
- **Requirements to be met by storerooms and receptacles:** *No special requirements.*
- **Further information about storage conditions:** *Keep container tightly sealed.*
- **Specific end use(s)** *No further relevant information available.*

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** *No further data; see Section 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.*  
*Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*  
*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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.*
- **Eye protection:** *Goggles recommended during refilling.*

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Trade name: Lithium/Cesium Acetate

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## 9 Physical and chemical properties

· <b>Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
Form:	Liquid
Color:	According to product specification
· <b>Odor:</b> Indeterminate	
· <b>Odor threshold:</b> Not determined.	
· <b>pH-value:</b> Not determined.	
· <b>Change in condition</b>	
Boiling point/Boiling range:	Undetermined.
· <b>Flash point:</b> Not applicable.	
· <b>Flammability (solid, gaseous):</b> Not applicable.	
· <b>Ignition temperature:</b>	
Decomposition temperature:	Not determined.
· <b>Auto igniting:</b> Product is not selfigniting.	
· <b>Danger of explosion:</b> See section 10	
· <b>Explosion limits:</b>	
Lower:	Not Applicable
Upper:	Not Applicable
· <b>Vapor pressure at 20 °C (68 °F):</b> 23 hPa (17 mm Hg)	
· <b>Density:</b> Not Applicable	
· <b>Relative density</b> Not determined.	
· <b>Vapor density</b> Not determined.	
· <b>Evaporation rate</b> Not determined.	
· <b>Solubility in / Miscibility with</b> Not Determined	
· <b>Water:</b> Insoluble.	
· <b>Partition coefficient (n-octanol/water):</b> Not determined.	
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Organic solvents:	0.0 %
Water:	98.8 %
VOC content:	0.0 g/l / 0.00 lb/gl
· <b>Solids content:</b> 2.1 %	
· <b>Other information</b> 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.

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**Trade name:** *Lithium/Cesium Acetate*

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- **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:** *Based on available data, the classification criteria are not met.*
- **Primary irritant effect:**
- **on the skin:** *No irritant effect.*
- **on the eye:** *Irritant and potentially harmful*
- **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.*

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

*None of the ingredients is listed.*

- **NTP (National Toxicology Program)**

*None of the ingredients is listed.*

- **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:**  
*Water hazard class 1 (Self-assessment): slightly hazardous for water*  
*Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- **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:**  
*Can not be disposed of together with household garbage. Do not allow product to reach sewage system.*

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Trade name: Lithium/Cesium Acetate

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- **Uncleaned packagings:**
- **Recommendation:** Discard must be made according to official regulations.

## 14 Transport information

<b>· UN-Number</b>	
<b>· DOT, ADR, IMDG, IATA</b>	Not regulated
<b>· UN proper shipping name</b>	
<b>· DOT, ADR, IMDG, IATA</b>	Not regulated
<b>· Transport hazard class(es)</b>	
<b>· DOT, ADR, IMDG, IATA</b>	
<b>· Class</b>	Not regulated
<b>· Packing group</b>	
<b>· DOT, ADR, IMDG, IATA</b>	Not regulated
<b>· Environmental hazards:</b>	
<b>· Marine pollutant:</b>	No
<b>· Special precautions for user</b>	Not applicable.
<b>· Stowage Category</b>	A
<b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>· UN "Model Regulation":</b>	Not regulated

## 15 Regulatory information

<b>· Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
<b>· Sara</b>	
<b>· Section 355 (extremely hazardous substances):</b>	
None of the ingredients is listed.	
<b>· Section 313 (Specific toxic chemical listings):</b>	
None of the ingredients is listed.	
<b>· TSCA (Toxic Substances Control Act):</b>	
1185-53-1	Tris Hydrochloride
1310-73-2	sodium hydroxide
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid
7647-17-8	Cesium Chloride
7732-18-5	Water
<b>· Proposition 65</b>	
<b>· Chemicals known to cause cancer:</b>	
None of the ingredients is listed.	
<b>· Chemicals known to cause reproductive toxicity for females:</b>	
None of the ingredients is listed.	

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**Trade name: Lithium/Cesium Acetate**

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **GHS label elements** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Quality Control Dept.

· **Date of preparation / last revision** 07/11/2017 / -

· **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

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

## 1 Identification

- **Product identifier**
- **Trade name:** PEG
- **Article number:** 2200203
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 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)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**  
Mixture of substances listed below with nonhazardous additions.  
Mixture: consisting of the following components.

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**· Dangerous components:**

CAS: 25322-68-3 NLP: 500-038-2 RTECS: TQ4027000	Polyethylene Glycol	10-50%
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## 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:** Flush eyes with running water as a precaution.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for 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**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- **Environmental precautions:**  
Dilute with plenty of water.  
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:**

25322-68-3	Polyethylene Glycol	30 mg/m <sup>3</sup>
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**· PAC-2:**

25322-68-3	Polyethylene Glycol	1,300 mg/m <sup>3</sup>
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· PAC-3:

25322-68-3 Polyethylene Glycol

7,700 mg/m<sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special requirements.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Further information about storage conditions:**
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see Section 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

25322-68-3 Polyethylene Glycol

WEEL	Long-term value: 10 mg/m <sup>3</sup> (H); MW>200
------	--

- **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.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Goggles recommended during refilling.

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Trade name: PEG

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## 9 Physical and chemical properties

· <b>Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
Form:	Liquid
Color:	According to product specification
· <b>Odor:</b> Indeterminate	
· <b>Odor threshold:</b> Not determined.	
· <b>pH-value:</b> Not determined.	
· <b>Change in condition</b>	
Boiling point/Boiling range:	Undetermined.
· <b>Flash point:</b> Not applicable.	
· <b>Flammability (solid, gaseous):</b> Not applicable.	
· <b>Ignition temperature:</b> 320 °C (608 °F)	
· <b>Decomposition temperature:</b> Not determined.	
· <b>Auto igniting:</b> Product is not selfigniting.	
· <b>Danger of explosion:</b> See section 10	
· <b>Explosion limits:</b>	
Lower:	Not Applicable
Upper:	Not Applicable
· <b>Vapor pressure at 20 °C (68 °F):</b> 23 hPa (17 mm Hg)	
· <b>Density:</b> Not Applicable	
· <b>Relative density</b> Not determined.	
· <b>Vapor density</b> Not determined.	
· <b>Evaporation rate</b> Not determined.	
· <b>Solubility in / Miscibility with</b> Not Determined	
· <b>Water:</b> Fully miscible.	
· <b>Partition coefficient (n-octanol/water):</b> Not determined.	
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Organic solvents:	0.0 %
Water:	50.0 %
VOC content:	0.0 g/l / 0.00 lb/gl
· <b>Solids content:</b> 50.0 %	
· <b>Other information</b> 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.

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Trade name: PEG

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- **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:** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritant and potentially harmful
- **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.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

- **ATE (Acute Toxicity Estimate)**

Oral LC50 / 96 h 1000 mg/L (*Leuciscus idus*)

- **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:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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Trade name: PEG

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## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Can not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Discard must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleaning agents.

## 14 Transport information

- |  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT, ADR, ADN, IMDG, IATA</b>   | Not regulated   |
| · <b>UN proper shipping name</b>   |                 |
| · <b>DOT, ADR, ADN, IMDG, IATA</b>   | Not regulated   |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT, ADR, ADN, IMDG, IATA</b>   |                 |
| · <b>Class</b>   | Not regulated   |
| · <b>Packing group</b>   |                 |
| · <b>DOT, ADR, IMDG, IATA</b>  | Not regulated   |
| · <b>Environmental hazards:</b>  |                 |
| · <b>Marine pollutant:</b>   | No              |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>  | Not regulated   |

## 15 Regulatory information

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

- **Section 355 (extremely hazardous substances):**  
None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**  
None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act):**  
All ingredients are listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**  
None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**  
None of the ingredients is listed.

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Trade name: PEG

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **GHS label elements** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Quality Control Dept.

· **Date of preparation / last revision** 07/11/2017 / -

· **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

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

## 1 Identification

- **Product identifier**
- **Trade name:** TE/Cation MIXX
- **Article number:** 2200204
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 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)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**  
Mixture of substances listed below with nonhazardous additions.  
Mixture: consisting of the following components.
- **Dangerous components:** Void

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Trade name: TE/Cation MIXX

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## 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:** Flush eyes with running water as a precaution.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for 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**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- **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:**

6108-17-4	LITHIUM ACETATE DIHYDRATE	3.2 mg/m <sup>3</sup>
1185-53-1	Tris Hydrochloride	12 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid	4.1 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	0.5 mg/m <sup>3</sup>
7647-17-8	Cesium Chloride	21 mg/m <sup>3</sup>

- **PAC-2:**

6108-17-4	LITHIUM ACETATE DIHYDRATE	36 mg/m <sup>3</sup>
1185-53-1	Tris Hydrochloride	130 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid	45 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	5 mg/m <sup>3</sup>
7647-17-8	Cesium Chloride	230 mg/m <sup>3</sup>

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Trade name: TE/Cation MIXX

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· PAC-3:		
6108-17-4	LITHIUM ACETATE DIHYDRATE	210 mg/m <sup>3</sup>
1185-53-1	Tris Hydrochloride	790 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid	200 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	50 mg/m <sup>3</sup>
7647-17-8	Cesium Chloride	400 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special requirements.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see Section 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.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Goggles recommended during refilling.

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Trade name: TE/Cation MIXX

(Contd. of page 3)

## 9 Physical and chemical properties

· <b>Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
Form:	Liquid
Color:	According to product specification
· <b>Odor:</b> Indeterminate	
· <b>Odor threshold:</b> Not determined.	
· <b>pH-value:</b> Not determined.	
· <b>Change in condition</b>	
Boiling point/Boiling range:	Undetermined.
· <b>Flash point:</b> Not applicable.	
· <b>Flammability (solid, gaseous):</b> Not applicable.	
· <b>Ignition temperature:</b>	
Decomposition temperature:	Not determined.
· <b>Auto igniting:</b> Product is not selfigniting.	
· <b>Danger of explosion:</b> See section 10	
· <b>Explosion limits:</b>	
Lower:	Not Applicable
Upper:	Not Applicable
· <b>Vapor pressure at 20 °C (68 °F):</b> 23 hPa (17 mm Hg)	
· <b>Density:</b> Not Applicable	
· <b>Relative density</b> Not determined.	
· <b>Vapor density</b> Not determined.	
· <b>Evaporation rate</b> Not determined.	
· <b>Solubility in / Miscibility with</b> Not Determined	
· <b>Water:</b> Insoluble.	
· <b>Partition coefficient (n-octanol/water):</b> Not determined.	
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Organic solvents:	0.0 %
Water:	94.0 %
VOC content:	0.0 g/l / 0.00 lb/gl
· <b>Solids content:</b> 4.0 %	
· <b>Other information</b> 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.

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Trade name: TE/Cation MIXX

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- **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:** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritant and potentially harmful
- **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.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **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:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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:**  
Can not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 6)

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Printing date 07/11/2017

Reviewed on 07/11/2017

Trade name: TE/Cation MIXX

(Contd. of page 5)

- **Uncleaned packagings:**
- **Recommendation:** Discard must be made according to official regulations.

## 14 Transport information

<b>· UN-Number</b>	
<b>· DOT, ADR, IMDG, IATA</b>	Not regulated
<b>· UN proper shipping name</b>	
<b>· DOT, ADR, IMDG, IATA</b>	Not regulated
<b>· Transport hazard class(es)</b>	
<b>· DOT, ADR, IMDG, IATA</b>	
<b>· Class</b>	Not regulated
<b>· Packing group</b>	
<b>· DOT, ADR, IMDG, IATA</b>	Not regulated
<b>· Environmental hazards:</b>	
<b>· Marine pollutant:</b>	No
<b>· Special precautions for user</b>	Not applicable.
<b>· Stowage Category</b>	A
<b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>· UN "Model Regulation":</b>	Not regulated

## 15 Regulatory information

<b>· Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
<b>· Sara</b>	
<b>· Section 355 (extremely hazardous substances):</b>	
None of the ingredients is listed.	
<b>· Section 313 (Specific toxic chemical listings):</b>	
None of the ingredients is listed.	
<b>· TSCA (Toxic Substances Control Act):</b>	
1185-53-1	Tris Hydrochloride
60-00-4	Ethylenediamine Tetraacetic Acid, Free Acid
1310-73-2	sodium hydroxide
7647-17-8	Cesium Chloride
7732-18-5	Water
<b>· Proposition 65</b>	
<b>· Chemicals known to cause cancer:</b>	
None of the ingredients is listed.	
<b>· Chemicals known to cause reproductive toxicity for females:</b>	
None of the ingredients is listed.	

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/11/2017

Reviewed on 07/11/2017

Trade name: TE/Cation MIXX

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **GHS label elements** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Quality Control Dept.

· **Date of preparation / last revision** 07/11/2017 / -

· **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

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

## 1 Identification

- **Product identifier**
- **Trade name:** SOS
- **Article number:** 2200206
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 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)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**  
Mixture of substances listed below with nonhazardous additions.  
Mixture: consisting of the following components.
- **Dangerous components:** Void

# Safety Data Sheet

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Printing date 07/11/2017

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Trade name: SOS

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## 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:** Flush eyes with running water as a precaution.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for 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**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **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:**  
None of the ingredients is listed.

· **PAC-2:**  
None of the ingredients is listed.

· **PAC-3:**  
None of the ingredients is listed.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special requirements.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.

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Trade name: SOS

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- **Further information about storage conditions:**
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see Section 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.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Not required.

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	According to product specification
<b>Odor:</b>	Indeterminate
<b>Odor threshold:</b>	Not determined.
- **pH-value:** Not applicable.
- **Change in condition**
- **Boiling point/Boiling range:** Undetermined.
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not determined.
- **Ignition temperature:**
- **Decomposition temperature:** Not determined.

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Trade name: SOS

(Contd. of page 3)

· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	See section 10
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not Applicable
<b>Upper:</b>	Not Applicable
· <b>Vapor pressure:</b>	Not applicable.
· <b>Density:</b>	Not Applicable
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with</b>	Not Determined
· <b>Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	68.0 %
<b>VOC content:</b>	0.0 g/l / 0.00 lb/gl
<b>Solids content:</b>	100.0 %
· <b>Other information</b>	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:** Based on available data, the classification criteria are not met.
  - **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** Irritant and potentially harmful
  - **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.

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# Safety Data Sheet

acc. to OSHA HCS

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Trade name: SOS

(Contd. of page 4)

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **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:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **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:**

Can not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Discard must be made according to official regulations.

## 14 Transport information

- **UN-Number**

- **DOT, ADR, ADN, IMDG, IATA** Not regulated

- **UN proper shipping name**

- **DOT, ADR, ADN, IMDG, IATA** Not regulated

- **Transport hazard class(es)**

- **DOT, ADR, ADN, IMDG, IATA**

- **Class** Not regulated

- **Packing group**

- **DOT, ADR, IMDG, IATA** Not regulated

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Trade name: SOS

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- |  |                 |
|--|-----------------|
| <b>· Environmental hazards:</b>  |                 |
| <b>· Marine pollutant:</b>   | No              |
| <b>· Special precautions for user</b>  | Not applicable. |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| <b>· UN "Model Regulation":</b>  | Not regulated   |

## 15 Regulatory information

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

<b>· Section 355 (extremely hazardous substances):</b>
--

None of the ingredients is listed.
------------------------------------

<b>· Section 313 (Specific toxic chemical listings):</b>
--

None of the ingredients is listed.
------------------------------------

<b>· TSCA (Toxic Substances Control Act):</b>
---

73049-73-7	Peptone Y
50-99-7	D-(+)-Dextrose, Anhydrous
8013-01-2	Yeast Extract Powder
56-41-7	L-Alanine
56-40-6	Glycine
56-86-0	L-Glutamic Acid, free acid
56-85-9	L-Glutamine
147-85-3	L-Proline
56-45-1	L-serine
7732-18-5	Water

<b>· Proposition 65</b>
-------------------------

<b>· Chemicals known to cause cancer:</b>
---

None of the ingredients is listed.
------------------------------------

<b>· Chemicals known to cause reproductive toxicity for females:</b>
--

None of the ingredients is listed.
------------------------------------

<b>· Chemicals known to cause reproductive toxicity for males:</b>
--

None of the ingredients is listed.
------------------------------------

<b>· Chemicals known to cause developmental toxicity:</b>
---

None of the ingredients is listed.
------------------------------------

<b>· Carcinogenic categories</b>
----------------------------------

<b>· EPA (Environmental Protection Agency)</b>
--

None of the ingredients is listed.
------------------------------------

<b>· TLV (Threshold Limit Value established by ACGIH)</b>
---

None of the ingredients is listed.
------------------------------------

<b>· NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
---

None of the ingredients is listed.
------------------------------------

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**Trade name: SOS**

(Contd. of page 6)

- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Department issuing SDS:** Quality Control Dept.
- **Date of preparation / last revision** 07/11/2017 / -
- **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
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit

US

## 1 Identification

- **Product identifier**
- **Trade name:** Histamine Solution
- **Article number:** 2200207
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
2-imidazol-4-ylethylamine dihydrochloride
- **Hazard statements**  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.
- **Precautionary statements**  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Contaminated work clothing must not be allowed out of the workplace.  
Wear protective gloves.  
[In case of inadequate ventilation] wear respiratory protection.  
IF ON SKIN: Wash with plenty of water.  
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.  
Specific treatment (see on this label).  
If skin irritation or rash occurs: Get medical advice/attention.  
If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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**Trade name: Histamine Solution**

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Wash contaminated clothing before reuse.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = \*1

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:**

Mixture of substances listed below with nonhazardous additions.

Mixture: consisting of the following components.

· **Dangerous components:**

CAS: 56-92-8	2-imidazol-4-ylethylamine dihydrochloride	2.5-<10%
EINECS: 200-298-4		
RTECS: MS1575000		

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

If breathed in, supply fresh air. If not breathing, give artificial respiration. Consult a Doctor.

· **After skin contact:** Wash off with soap and plenty of water. Consult a Doctor.

· **After eye contact:** Flush eyes with running water as a precaution.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for 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.

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Reviewed on 07/11/2017

**Trade name: Histamine Solution**

(Contd. of page 2)

- **Advice for firefighters**
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- **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).  
Pick up mechanically, dispose contaminated material as waste according to Section 13.
- **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:**

1185-53-1	Tris Hydrochloride	12 mg/m <sup>3</sup>
6381-92-6	Ethylenediamine Tetraacetic Acid Disodium Salt Dihydrate	30 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	0.5 mg/m <sup>3</sup>

· **PAC-2:**

1185-53-1	Tris Hydrochloride	130 mg/m <sup>3</sup>
6381-92-6	Ethylenediamine Tetraacetic Acid Disodium Salt Dihydrate	330 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	5 mg/m <sup>3</sup>

· **PAC-3:**

1185-53-1	Tris Hydrochloride	790 mg/m <sup>3</sup>
6381-92-6	Ethylenediamine Tetraacetic Acid Disodium Salt Dihydrate	2,000 mg/m <sup>3</sup>
1310-73-2	sodium hydroxide	50 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace. Avoid direct contact with skin and eyes.
- **Information about protection against explosions and fires:** No special requirements.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 2-8 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Further information about storage conditions:**
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

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

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/11/2017

Reviewed on 07/11/2017

Trade name: Histamine Solution

(Contd. of page 3)

- **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:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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 through 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

- |  |                                    |
|--|------------------------------------|
| · <b>Information on basic physical and chemical properties</b> |                                    |
| · <b>General Information</b>                                   |                                    |
| · <b>Appearance:</b>   |                                    |
| <b>Form:</b>   | Liquid                             |
| <b>Color:</b>  | According to product specification |
| · <b>Odor:</b> Indeterminate                                   |                                    |
| · <b>Odor threshold:</b> Not determined.                       |                                    |
| · <b>pH-value:</b> Not determined.                             |                                    |
| · <b>Change in condition</b>                                   |                                    |
| <b>Boiling point/Boiling range:</b>                            | Undetermined.                      |
| · <b>Flash point:</b> Not applicable.                          |                                    |
| · <b>Flammability (solid, gaseous):</b> Not applicable.        |                                    |

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Printing date 07/11/2017

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Trade name: Histamine Solution

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· <b>Ignition temperature:</b>	
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	See section 10
· <b>Explosion limits:</b>	
· <b>Lower:</b>	Not Applicable
· <b>Upper:</b>	Not Applicable
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density:</b>	Not Applicable
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with</b>	Not Determined
· <b>Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
· <b>Dynamic:</b>	Not determined.
· <b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
· <b>Organic solvents:</b>	0.0 %
· <b>Water:</b>	96.8 %
· <b>VOC content:</b>	0.0 g/l / 0.00 lb/gl
· <b>Other information</b>	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:**

· <b>LD/LC50 values that are relevant for classification:</b>		
<b>ATE (Acute Toxicity Estimate)</b>		
Oral	LD50	84467 mg/kg (mouse)
<b>56-92-8 2-imidazol-4-ylethylamine dihydrochloride</b>		
Oral	LD50	2534 mg/kg (mouse)

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# Safety Data Sheet

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Reviewed on 07/11/2017

**Trade name: Histamine Solution**

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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritant and potentially harmful
- **Sensitization:**  
Sensitization possible through inhalation.  
Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Irritant
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **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:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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:**  
Can not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Discard must be made according to official regulations.

## 14 Transport information

- **UN-Number**
- **DOT, ADR, ADN, IMDG, IATA**                      Not regulated

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/11/2017

Reviewed on 07/11/2017

Trade name: Histamine Solution

(Contd. of page 6)

- |  |                 |
|--|-----------------|
| <b>· UN proper shipping name</b>   |                 |
| <b>· DOT, ADR, ADN, IMDG, IATA</b>   | Not regulated   |
| <b>· Transport hazard class(es)</b>  |                 |
| <b>· DOT, ADR, ADN, IMDG, IATA</b>   |                 |
| <b>· Class</b>   | Not regulated   |
| <b>· Packing group</b>   |                 |
| <b>· DOT, ADR, IMDG, IATA</b>  | Not regulated   |
| <b>· Environmental hazards:</b>  |                 |
| <b>· Marine pollutant:</b>   | No              |
| <b>· Special precautions for user</b>  | Not applicable. |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| <b>· UN "Model Regulation":</b>  | Not regulated   |

## 15 Regulatory information

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

<b>· Section 355 (extremely hazardous substances):</b>
--

None of the ingredients is listed.
------------------------------------

<b>· Section 313 (Specific toxic chemical listings):</b>
--

None of the ingredients is listed.
------------------------------------

<b>· TSCA (Toxic Substances Control Act):</b>
---

56-92-8	2-imidazol-4-ylethylamine dihydrochloride
1185-53-1	Tris Hydrochloride
1310-73-2	sodium hydroxide
7732-18-5	Water

<b>· Proposition 65</b>
-------------------------

<b>· Chemicals known to cause cancer:</b>
---

None of the ingredients is listed.
------------------------------------

<b>· Chemicals known to cause reproductive toxicity for females:</b>
--

None of the ingredients is listed.
------------------------------------

<b>· Chemicals known to cause reproductive toxicity for males:</b>
--

None of the ingredients is listed.
------------------------------------

<b>· Chemicals known to cause developmental toxicity:</b>
---

None of the ingredients is listed.
------------------------------------

<b>· Carcinogenic categories</b>
----------------------------------

<b>· EPA (Environmental Protection Agency)</b>
--

None of the ingredients is listed.
------------------------------------

<b>· TLV (Threshold Limit Value established by ACGIH)</b>
---

None of the ingredients is listed.
------------------------------------

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# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/11/2017

Reviewed on 07/11/2017

**Trade name: Histamine Solution**

(Contd. of page 7)

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

None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

2-imidazol-4-ylethylamine dihydrochloride

· **Hazard statements**

*May cause allergy or asthma symptoms or breathing difficulties if inhaled.*

*May cause an allergic skin reaction.*

· **Precautionary statements**

*Avoid breathing dust/fume/gas/mist/vapors/spray*

*Contaminated work clothing must not be allowed out of the workplace.*

*Wear protective gloves.*

*[In case of inadequate ventilation] wear respiratory protection.*

*IF ON SKIN: Wash with plenty of water.*

*If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.*

*Specific treatment (see on this label).*

*If skin irritation or rash occurs: Get medical advice/attention.*

*If experiencing respiratory symptoms: Call a POISON CENTER/doctor.*

*Wash contaminated clothing before reuse.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Quality Control Dept.

· **Date of preparation / last revision** 07/11/2017 / -

· **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)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

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**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 07/11/2017

Reviewed on 07/11/2017

**Trade name: Histamine Solution**

(Contd. of page 8)

*PEL: Permissible Exposure Limit*  
*REL: Recommended Exposure Limit*  
*Resp. Sens. 1: Respiratory sensitisation – Category 1*  
*Skin Sens. 1: Skin sensitisation – Category 1*

US

## 1 Identification

- **Product identifier**
- **Trade name:** Carrier DNA
- **Article number:** 2200205
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 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)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**  
Mixture of substances listed below with nonhazardous additions.  
Mixture: consisting of the following components.
- **Dangerous components:** Void

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/11/2017

Reviewed on 07/11/2017

Trade name: Carrier DNA

(Contd. of page 1)

## 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:** Flush eyes with running water as a precaution.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for 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**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- **Environmental precautions:** Dilute with plenty of 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:**  
None of the ingredients is listed.

· **PAC-2:**  
None of the ingredients is listed.

· **PAC-3:**  
None of the ingredients is listed.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special requirements.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 2-8 °C

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/11/2017

Reviewed on 07/11/2017

Trade name: Carrier DNA

(Contd. of page 2)

- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Further information about storage conditions:**
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see Section 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.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
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 through 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:**

<b>Form:</b>	Solution
<b>Color:</b>	Clear
<b>Odor:</b>	Indeterminate
<b>Odor threshold:</b>	Not determined.
- **pH-value:** Not determined.
- **Change in condition**
- **Boiling point/Boiling range:** Undetermined.
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:**
- **Decomposition temperature:** Not determined.

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Trade name: Carrier DNA

(Contd. of page 3)

· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	See section 10
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not Applicable
<b>Upper:</b>	Not Applicable
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density:</b>	Not Applicable
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with</b>	Not Determined
· <b>Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	99.0 %
<b>VOC content:</b>	0.0 g/l / 0.00 lb/gl
<b>Solids content:</b>	1.0 %
· <b>Other information</b>	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:** Based on available data, the classification criteria are not met.
  - **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** Irritant and potentially harmful
  - **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 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/11/2017

Reviewed on 07/11/2017

Trade name: Carrier DNA

(Contd. of page 4)

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **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:** Generally 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:**

Can not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Discard must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleaning agents.

## 14 Transport information

- **UN-Number**

- **DOT, ADR, ADN, IMDG, IATA** Not regulated

- **UN proper shipping name**

- **DOT, ADR, ADN, IMDG, IATA** Not regulated

- **Transport hazard class(es)**

- **DOT, ADR, ADN, IMDG, IATA**

- **Class** Not regulated

- **Packing group**

- **DOT, ADR, IMDG, IATA** Not regulated

- **Environmental hazards:**

Not applicable.

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/11/2017

Reviewed on 07/11/2017

Trade name: Carrier DNA

(Contd. of page 5)

- |  |                 |
|--|-----------------|
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>  | Not regulated   |

## 15 Regulatory information

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

· **Sara**

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

7732-18-5 | Water

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **GHS label elements** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Quality Control Dept.

· **Date of preparation / last revision** 07/11/2017 / -

(Contd. on page 7)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 07/11/2017

Reviewed on 07/11/2017

**Trade name: Carrier DNA**

(Contd. of page 6)

**· 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*

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*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*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

US