

## SECTION 1: Identification

### 1.1. Identification

Product form	: Substance
Trade name	: Polyethylenimine HCl MAX, Linear, Mw 4,000 (PEI MAX 4000)
CAS-No.	: 49553-93-7
Product code	: 24885
Formula	: H <sub>2</sub> N-(C <sub>2</sub> H <sub>5</sub> N) <sub>n</sub> -H

### 1.2. Recommended use and restrictions on use

Recommended use	: Use as laboratory reagent, Manufacture of substances
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### 1.3. Supplier

**Supplier**  
Kyfora Bio  
767 Electronic Drive  
Horsham, PA 19044 - United States  
T (215) 343-6484  
[www.kyforabio.com](http://www.kyforabio.com)

### 1.4. Emergency telephone number

Emergency number	: 24-hour emergency phone number ChemTel 1-800-255-3924
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## SECTION 2: Hazard(s) identification


### 2.1. Classification of the substance or mixture

#### GHS US classification

Acute toxicity (oral) Category 4	Harmful if swallowed
Skin corrosion/irritation Category 2	Causes skin irritation

### 2.2. GHS Label elements, including precautionary statements

#### GHS US labeling

Hazard pictograms (GHS US)	: 
Signal word (GHS US)	: Warning
Hazard statements (GHS US)	: Harmful if swallowed Causes skin irritation
Precautionary statements (GHS US)	: Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Call a poison center or doctor if you feel unwell. If on skin: Wash with plenty of water. Specific treatment (see supplemental first aid instruction on this label)

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name	Product identifier	%	GHS US classification
Polyethylenimine HCl MAX, Linear, Mw 4,000 (PEI MAX 4000) (Main constituent)	(CAS-No.) 49553-93-7	≤ 100	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315

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Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact	: Irritation.
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### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam.
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### 5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	: Toxic fumes may be released.
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### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. Avoid contact with skin and eyes.
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#### 6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Mechanically recover the product.
Other information	: Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures	: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store at room temp. Keep cool. Store in a well-ventilated place.
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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

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No additional information available

#### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Hand protection:

Protective gloves

##### Eye protection:

Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

##### Personal protective equipment symbol(s):



### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: white to yellow powder.
Color	: No data available
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: no data
Freezing point	: Not applicable
Boiling point	: no data
Flash point	: 504 °F
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: no data
Relative vapor density at 20°C	: no data
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable

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Explosive properties : No data available  
Oxidizing properties : No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

Polyethylenimine HCl MAX, Linear, Mw 4,000 (PEI MAX 4000) (49553-93-7)	
LD50 oral rat	1 ml/kg ml/Kg
LD50 dermal rat	> ≥ 2000 mg/kg >2000 mg/Kg
ATE US (oral)	1000 mg/kg body weight
ATE US (dermal)	2000 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.  
Serious eye damage/irritation : Not classified  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified  
Reproductive toxicity : Not classified  
  
STOT-single exposure : Not classified  
STOT-repeated exposure : Not classified  
Aspiration hazard : Not classified  
Viscosity, kinematic : No data available  
Symptoms/effects after skin contact : Irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

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### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Polyethylenimine HCl MAX, Linear, Mw 4,000 (PEI MAX 4000) (49553-93-7)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

#### Polyethylenimine HCl MAX, Linear, Mw 4,000 (PEI MAX 4000) (49553-93-7)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

#### EU-Regulations

#### National regulations

No additional information available

### 15.3. US State regulations

## SECTION 16: Other information

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#### Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

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