



## TENAGA KIMIA SENDIRIAN BERHAD (26191A)

### Administration & Sales Office

Address: No. 8, Jalan SS 22/21, Damansara Jaya,  
47400 Petaling Jaya, Selangor  
Tel: + 60 – 3 – 7729 7464  
Fax: + 60 – 3 – 7729 8383  
E-mail: [sales@tenagakimia.com](mailto:sales@tenagakimia.com)

### Factory

Address: Lot 5065, 48100 Batu Arang,  
Selangor, Malaysia  
Tel: + 60 – 3 – 6035 2801  
Fax: + 60 – 3 – 6035 2802  
E-mail: [plant@tenagakimia.com](mailto:plant@tenagakimia.com)

Website: <http://www.tenagakimia.com>

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## MATERIAL SAFETY DATA SHEET

Date of issue: January 2008

### 1.0 PRODUCT AND COMPANY IDENTIFICATION

**Product name** Emulex<sup>®</sup>  
**General name** Emulex<sup>®</sup> packaged / cartridged emulsion explosive  
**General description** Water-in-oil emulsion

Product Type	Packing	Product use
E100	In paper shell or clear plastic film cartridge with metal clips on both ends.	For use as primer / general blasting application
E100G	In 17 mm diameter clear plastic pipe.	For use in contour blasting / pre-splitting application
E150	In paper shell or yellow plastic film cartridge with metal clips on both ends.	For use as primer / general blasting application.
E180	In paper shell or clear plastic film cartridge with metal clips on both ends.	For use in tough underwater / underground application.
E300	In pink plastic film cartridge with metal clips on both ends.	For use as column charge.
E400	In paper shell.	Permissible explosive for use in flammable, gassy, or dusty atmosphere.
E700	In orange ABS plastic canister.	For use in seismic operations.

**Company Name** Tenaga Kimia Sdn. Bhd.  
**Company Address** No. 8, Jalan SS 22/21, Damansara Jaya, 47400 Petaling Jaya, Selangor, Malaysia.  
**Emergency Tel Telephone Number** +60 3 6035 2801  
+60 3 7729 7464

Fax

+60 3 7729 8383

## 2.0 PRODUCT COMPOSITION / INFORMATION ON INGREDIENTS

Description	Proportion
Oxidiser (Nitrate Salts, Perchlorate)	70 – 100 %
Fuel oil materials	0 – 10 %
Other components determined not to be Hazardous	Balance to 100%

All given values are approximated for the purpose of the MSDS.

## 3.0 HAZARDS IDENTIFICATION

Risk of explosion by friction, impact, supersonic shock, heat, flame or other ignition sources, especially under confinement.

### Health hazard

**Acute-ingestion** May cause abdominal discomfort, pain, diarrhoea, vomiting and nausea.

**Acute-eye** May cause discomfort and impairment of vision.

**Acute-skin** May cause discomfort and rash for sensitive skin.

**Acute-inhalation** May cause nausea, giddiness and tiredness.

**Other info** None of the components of this material are listed as a carcinogen by OSHA.

### Other health hazard information

None established.

## 4.0 FIRST AID MEASURES

**Ingestion** Do not induce vomiting. Rinse mouth and drink one glass of water. If vomited, lower head below hips to prevent breathing in the vomit matter. Do not attempt to give liquid to an unconscious person. Seek medical attention.

**Eye** Flush with copious amount of running water for a minimum of 15 minutes. Eyelids should be held open to ensure a thorough rinsing. If irritation persists, seek medical attention.

**Skin** Remove contaminated clothing immediately. Wash affected area with soap and copious amount of water. If irritation persists, seek medical attention.

**Inhalation** Remove patient to fresh air. Allow patient to rest in a comfortable position until fully recovered. Administer artificial resuscitation if not breathing. If symptom persists, seek medical attention.

**Advice to doctor** Treat symptomatically.

## 5.0 FIRE FIGHTING MEASURES

It is unlikely to be a fire hazard under normal conditions. However, it will explode if suitably primed. For small fire, a fire extinguisher can be used or a heavy dousing of water is effective. For big fire, the area should be isolated and all personnel should be evacuated to a safe distance. Toxic fumes may be generated as the product decomposes.

## 6.0 ACCIDENTAL RELEASE MEASURES

**Spill release** Evacuate area of all non-essential personnel. Eliminate all ignition sources. Contain the source and spread of the spill. Make sure the spilt material does not enter any waterways or drains.

Spilt material should be scooped and placed in clean, approved containers, which are then labelled and sealed. All residues should be scraped up for disposal if possible. Inert absorbent material such as sand should be spread over the area.

## 7.0 STORAGE AND HANDLING

Store in a clean, dry, cool and well-ventilated magazine, in accordance with the local, state and federal laws and regulations. Store away from all ignition sources such as heat, flame and spark.

It should only be used by or under guidance of trained personnel.

## 8.0 EXPOSURE CONTROLS & PERSONAL PROTECTION

**Engineering controls** Use in well-ventilated area.

### Personal protective equipment

**Respirator** Not required according to the conditions of use.

**Eye protection** Safety goggles if eye contact is likely.

**Protective clothing** Protective clothing if splash is likely.

**Glove** Impervious rubber gloves if contact with product is likely.

### Flammability

**Fire hazards** Product is combustible. All ignition sources should be eliminated.

## 9.0 PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** On exposure, product inside is grey (type with aluminium powder). On touch, product is plasticine like and feels oily.

**Melting point** Not applicable

**Boiling point** Not applicable

**Vapour pressure** Not applicable

**Specific gravity**

	Product Type						
	E100	E100G	E150	E180	E300	E400	E700
Specific gravity, g/ml	1.10 to 1.25	1.05 to 1.15	1.10 to 1.25	1.10 to 1.25	1.25 to 1.32	1.10 to 1.25	1.15 to 1.20

<b>Flash point</b>	Not applicable
<b>Flammability limit</b>	Not applicable
<b>Solubility in water</b>	Insoluble but dispersible with jets of water
<b>Other properties</b>	None established

## 10.0 STABILITY AND REACTIVITY DATA

<b>Stability</b>	The product is stable under normal conditions. It may explode when subjected to supersonic shock, burning, strong energy, fire, or heavy impact, particularly when under confinement.
<b>Conditions to Avoid</b>	Avoid contact with fire, heat and strong shock or impact, all ignition sources.
<b>Materials to Avoid</b>	Avoid corrosives chemicals (e.g. strong acids or strong alkalis), oxidizing material, metal powder, combustible material.
<b>Hazardous Decomposition Products</b>	Nitrogen Oxides (NO <sub>x</sub> ), Carbon Monoxide (CO)
<b>Hazardous Polymerization</b>	Will not occur

## 11.0 TOXICOLOGY INFORMATION

Toxic fumes nitrogen oxides and carbon monoxide can be released on detonation and fire.

Nitrogen oxides vapour is reddish brown with acrid suffocating odour. It is poisonous, oxidising and corrosive. It may cause severe eye, skin, and mucous membrane irritation or corrosive burns. Inhalation may cause severe irritation, chemical pneumonitis and pulmonary edema. Prompt medical attention is mandatory in all cases of over exposure.

Carbon monoxide is an odourless, colourless, highly flammable and poisonous gas. Carbon monoxide acts as a chemical asphyxiant binding to the blood haemoglobin, greatly reducing the red blood cells' ability to transport oxygen to body tissues. Effects may include headaches, dizziness, convulsions, loss of consciousness and death.

## 12.0 ECOLOGICAL INFORMATION

Prevent contamination of waterways. Poisonous to aquatic organisms.

## 13.0 DISPOSAL CONSIDERATION

Wastes of matrix should be notified to supplier or disposed in blast holes by qualified personnel. Do not put remainders in a bin or to the dumping.

## 14.0 TRANSPORT INFORMATION

Classified as Class 1 Dangerous Goods. Transport in accordance with the local, state and federal laws and regulations.

<b>Shipping name</b>	Explosive, blasting, type E
<b>General description</b>	Water-in-oil emulsion
<b>UN Classification</b>	1.1D
<b>UN Number</b>	0241
<b>Hazchem code</b>	E
<b>Poisons schedule</b>	Not scheduled

## 15.0 REGULATORY INFORMATION

<b>Classification</b>	Based on available information, not classified as hazardous.
<b>Risk Phrase</b>	Risk of explosion by shock, fire or other sources of ignition
<b>Safety Phrase</b>	Keep and store away from combustible material. Prevent contact with skin and eyes. Rinse immediately with water and seek medical advice in case of contact with eyes. Wear suitable gloves and eye & face protection.
<b>Poisons Schedule</b>	Not scheduled.
<b>SARA Title III Information</b>	N/P
<b>Federal Regulatory Information</b>	N/P
<b>State Regulatory Information</b>	N/P