



TENAGA KIMIA SENDIRIAN BERHAD (26191 A)

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MATERIAL SAFETY DATA SHEET

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1.0 PRODUCT AND COMPANY IDENTIFICATION

Product name	D/S Delay Detonators Short Delay Detonators Instant Electric Detonators
General name	Detonators, Electric
General description	Detonators, Electric
Product use	Detonators are the primary initiator of any blasts. Electric detonators are classified as group 1 detonators with a strength rating of No.8. A minimum of 0.45amp firing current is required to initiate one electric detonator and a minimum of 1.2amp for safe initiation of series of electric detonators.
Company Name	Tenaga Kimia Sdn. Bhd.
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2.0 PRODUCT COMPOSITION / INFORMATION ON INGREDIENTS

Ingred Name:	PENTAERYTHRITOL TETRANITRATE. VP: .001 @ 97C. MP: D @ 300C. SPEC GRAV: 1.47(SOLID).
CAS:	78-11-5
RTECS #:	PZ2620000
Ingred Name:	DIAZODINITROPHENOL. BP: D @ 180C. SPEC GRAV: 1.63.
CAS:	4682-03-5
Ingred Name:	ALUMINUM (SARA III)

CAS: 7429-90-5
RTECS #: BD0330000
OSHA PEL: 15MG/M3 DUST/5 FUME
ACGIH TLV: 10MG/M3 DUST; 9192

3.0 HAZARDS IDENTIFICATION

LD50 LC50 Mixture: NONE SPECIFIED BY MANUFACTURER.
Routes of Entry: Inhalation: YES Skin: YES Ingestion: NO
Reports of Carcinogenicity: NTP: NO IARC: NO OSHA: NO
Health Hazards Acute and Chronic: SULFUR: EYE IRRITANT. ANTIMONY:
HIGHLY TOXIC & TOXIC.
Explanation of Carcinogenicity: NOT RELEVANT
Effects of Overexposure: NONE SPECIFIED BY MANUFACTURER.
Medical Cond Aggravated by Exposure: NONE SPECIFIED BY MANUFACTURER.

4.0 FIRST AID MEASURES

First Aid:
INGEST: CALL MD IMMEDIATELY.
INHAL: REMOVE TO FRESH AIR. SUPPORT BREATHING (GIVE O₂/ARTF RESP).

5.0 FIRE FIGHTING MEASURES

Extinguishing Media: NONE SPECIFIED BY MANUFACTURER.
Fire Fighting Procedures: DO NOT ATTEMPT TO FIGHT FIRES INVOLVING
EXPLOSIVES. IMMEDIATELY EVACUATE THE
AREA.
Unusual Fire/Explosion Hazard: AVOID TOXIC FUMES FROM THE FIRE.

6.0 ACCIDENTAL RELEASE MEASURES

Spill Release Procedures: NONE SPECIFIED BY MANUFACTURER.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

7.0 STORAGE AND HANDLING

Handling and Storage Precautions: NONE SPECIFIED BY MANUFACTURER.
Other Precautions: AVOID TOXIC FUMES FROM BLASTING.

8.0 EXPOSURE CONTROLS & PERSONAL PROTECTION

Respiratory Protection: NONE SPECIFIED BY MANUFACTURER.
Ventilation: NONE SPECIFIED BY MANUFACTURER.
Protective Gloves: NONE SPECIFIED BY MANUFACTURER.
Eye Protection: CHEMICAL WORKERS GOGGLES .
Other Protective Equipment: HARD HATS.
Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.
Supplemental Safety and Health
APPEAR/ODOR: (ING 1) COLORLESS CRYSTAL. (ING 2) COLORLESS NEEDLES.
(ING 3) RED/YELLOW POWDER. (ING 4) BLACK GRAINS. (ING 8)
SILVER METAL. (ING 9) PURPLE CRYSTALS.

9.0 PHYSICAL AND CHEMICAL PROPERTIES

HCC:	E2
Boiling Pt:	B.P. Text: SEE INGRED
Melt/Freeze Pt:	M.P/F.P Text: SEE INGRED
Vapor Pres:	SEE INGRED
Spec Gravity:	SEE INGRED
Appearance and Odor:	SEE SUPP DATA

10.0 STABILITY AND REACTIVITY DATA

NONE SPECIFIED BY MANUFACTURER.

Stability Condition to Avoid: NONE SPECIFIED BY MANUFACTURER.

Hazardous Decomposition Products: NONE SPECIFIED BY MANUFACTURER.

11.0 TOXICOLOGY INFORMATION

Main symptoms:	No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label.
Ingestion:	Swallowing of the material can cause a lowering of blood pressure, violent headaches, dizziness, weakness, blurred vision, nausea, vomiting, respiratory distress, slowing of heart rate, central nervous system depression, convulsions, unconsciousness and possible death.
Eye contact:	Exposure to the explosive charge inside metal tube may cause eye irritation.
Skin contact:	Contact of explosive charge inside metal tube with skin may result in irritation.
Inhalation:	Test firing of detonators in poorly ventilated areas can cause presence of lead fume in air. Lead fume may be irritant to mucous membranes and respiratory tract.
Long Term Effects:	Prolonged exposure to lead compounds can result in lead poisoning with possible effects such as abdominal pain, colic, constipation, loss of appetite, weight loss, metallic taste in the mouth, nausea, vomiting, irritability, a blue line on the gums, weakness, insomnia, joint and muscle pain and weakness, headache and tremor. Absorption of lead over a period of time can produce adverse effects on the blood and central nervous system.

12.0 ECOLOGICAL INFORMATION

Avoid contaminating waterways.

13.0 DISPOSAL CONSIDERATION

Waste Disposal Methods: THE DISPOSAL OF DAMAGED OR DETERIORATED ELECTRIC DETONATORS MUST BE CARRIED OUT IN ACCORDANCE WITH ALL FEDERAL AND STATE REGULATIONS.

14.0 TRANSPORT INFORMATION

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

Shipping name	Detonators, Electric
General description	Detonators, Electric
UN Classification	1.1B or 1.4B
UN Number	0030 (for 1.1B) or 0255 (for 1.4B)
Hazchem code	E
Poisons schedule	Not scheduled

15.0 REGULATORY INFORMATION

Hazard Category

Xn Harmful

R-phrase(s)

R 3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.

R20/22 Harmful by inhalation and if swallowed.

R33 Danger of cumulative effects.

S-phrase(s)

S13 Keep away from food, drink and animal feeding stuffs.

S20/21 When using, do not eat, drink or smoke.

S33 Take precautionary measures against static discharges.

S34 Avoid shock and friction.

S35 This material and its container must be disposed of in a safe way.