

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

Product Name: **SOLARCORD**  
Recommended use of the chemical **Detonating Cord for initiating charges**  
and restrictions on use:  
Supplier: Solar Industries India Ltd (SIIL)  
"Solar" House,  
14, Kachimet,  
Amravati Road,  
Nagpur - 440023  
Maharashtra  
India  
Telephone Number: +712 2561000  
+712 2560202

**2. HAZARDS IDENTIFICATION**

Based on available information, not classified as hazardous according to criteria of NOHSC; NON-HAZARDOUS SUBSTANCE.

Classified as Dangerous Goods by the criteria of the Code for the Transport of Explosives by Road and Rail; DANGEROUS GOODS.

**Risk Phrases:** Risk of explosion by shock, friction, fire or other sources of ignition.

**Safety Phrases:** Keep away from sources of ignition - No Smoking. This material and its container must be disposed of in a safe way.

**Poisons Schedule:** None allocated.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

**Product Description:** Continuous PETN explosive core enclosed in plastic tapes and fibers with an outer sleeve of textiles or plastic. Odourless.

Components	CAS Number	Proportion	Risk Phrases
Pentaerythritol tetranitrate (PETN)	78-11-5	10-80%	R3

**4. FIRST AID MEASURES**

For advice, contact a Poisons Information Center or a doctor at once. Construction of the product normally prevents contact with explosive component, however, in the event of exposure:

**Inhalation:** Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

**Skin Contact:** If skin contact occurs, remove contaminated clothing and wash skin with running water. If irritation occurs seek medical advice.

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**Eye Contact:** If in eyes, wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

**Ingestion:** Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Get to a doctor or hospital quickly.

**Medical attention and special treatment:** Treat symptomatically. Treat as for exposure to nitrates. May cause methemoglobinemia. PETN is a vasodilator. Maintain blood pressure by fluid administration. (1)

## 5. FIRE FIGHTING MEASURES

### **Hazards from combustion products:**

On burning under confined or semi-confined conditions, some oxides of nitrogen and/or carbon will be present. Brown fumes indicate the presence of toxic oxides of nitrogen.

### **Precautions for fire fighters and special protective equipment:**

Explosive material. Avoid all ignition sources. Risk of explosion by shock, friction, fire or other sources of ignition. In case of small fire where the actual explosive is not involved, carefully remove explosive to a safe distance, otherwise evacuate area immediately and allow to burn. Do NOT fight fire.

**Hazchem Code:** E

## 6. ACCIDENTAL RELEASE MEASURES

**Emergency procedures:** Clear area of all unprotected personnel. Shut off all possible sources of ignition. Handle with care. In the case of a transport accident notify the Police, Explosives Inspector and SIIL

**Methods for containment:** Collect loose or spilled solid material for storage or transport to secured magazine.

**Methods for cleaning up:** Review fire and explosion hazards before proceeding with clean up. Remove and protect ignition sources. Wear protective equipment during clean up. Mop up water using non-sparking tools. It is suggested that only personnel trained in Emergency Response should respond. Verify complete account of product(s). Notify authorities and follow applicable spill reporting requirements.

**Emergency procedures/Environmental precautions:** Shut off all possible sources of ignition. Clear area of all unprotected personnel. Wear protective equipment to prevent skin and eye contact. If contamination of sewers or waterways has occurred advise local emergency services.

## 7. HANDLING AND STORAGE

### **Conditions for safe storage:**

Store material in a well ventilated magazine suitably licensed for Class 1.1D Explosives. Store away from incompatible materials described in Section 10. Store away from sources of heat or ignition.

### **Precautions for safe handling:**

Avoid skin and eye contact. Do NOT subject the material to impact, friction between hard surfaces nor to any form of heating. Protect ends of cords from contact with moisture, and oil. Handle with care.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits:

No value assigned for this specific material by the National Occupational Health and Safety Commission.

### Engineering controls:

Natural ventilation should be adequate under normal use conditions.

### Personal Protective Equipment:

Personal Protection Guide No. 1, 1998: A - OVERALLS, SAFETY SHOES.

Wear standard safety equipment - overalls and safety shoes. Always wash hands before smoking, eating, drinking or using the toilet.

SIIL Personal Protection Guide:- OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES.



Containment of charge prevents exposure. Wear protective clothes, gloves and eye protection when handling. Wash hands and exposed skin before meals and after work.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Article . Flexible cord with a white powder core.

**Colour:** Outer coverings of textiles or plastics of various colours.

**Odour:** Odourless

**Solubility:** Insoluble in water.

**Specific Gravity:** 1.77 @ 20 °C (for PETN)

**Flash Point (°C):** Not applicable.

**% Volatile by Volume:** 0

**Melting Point/Range (°C):** 141.3 (for PETN)

**Decomposition Point (°C):** >150 (for PETN)

## 10. STABILITY AND REACTIVITY

**Chemical stability:** Detonation may occur from heavy impact or excessive heating, particularly under confinement.

**Conditions to avoid:** Avoid exposure to heat, sources of ignition, and open flame.

**Incompatible materials:** Incompatible with combustible materials. PETN is incompatible with oxidising agents, reducing agents, acids and alkalis.

### Hazardous decomposition products:

Oxides of carbon. Oxides of nitrogen.

**Hazardous reactions:** Explosive material. Hazardous polymerisation will not occur.

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## 11. TOXICOLOGICAL INFORMATION

The construction of these articles should prevent any chemical contamination. No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

**Ingestion:** Swallowing can result in nausea, vomiting, diarrhea, and abdominal pain. Other symptoms include headaches and dizziness.

**Eye contact:** May be an eye irritant.

**Skin contact:** Repeated or prolonged skin contact with PETN may lead to irritation.

**Inhalation:** Not a likely route of exposure due to the physical form of the product. Inhalation of PETN may result in respiratory irritation.

### Long Term Effects:

No information available for the product. Available evidence from animal studies indicate that repeated or prolonged exposure to a component of this material could result in effects on the blood system. (1) Blood effects include lowered blood pressure and methaemoglobinaemia. (1)

### Toxicological Data:

No LD50 data available for the product. For the constituent PETN (2):  
Oral LD50 (rat): 1660 mg/kg

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** Avoid contaminating waterways.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:** Small quantities of damaged or deteriorated explosives may be destroyed by inclusion in a blast hole containing good explosive(s). For large quantities of damaged or deteriorated explosives notify Solar .

**Contaminated Packaging:** No information available.

## 14. TRANSPORT INFORMATION

### Road and Rail Transport:

Classified as Dangerous Goods by the criteria of the Code for the Transport of Explosives by Road and Rail; DANGEROUS GOODS.



**UN No:** 0065

**Class-primary:** 1.1 D Explosive

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**Proper Shipping Name:** CORD, DETONATING

**Hazchem Code:** E

**Marine Transport**

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

**UN No:** 0065

**Class-primary:** 1.1 D Explosive

**Proper Shipping Name:** CORD, DETONATING

**Air Transport:**

TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in passenger aircraft and cargo aircraft.

## 15. REGULATORY INFORMATION

**Classification:** Based on available information, not classified as hazardous according to criteria of NOHSC; NON-HAZARDOUS SUBSTANCE.

**Risk Phrase(s):**

R2: Risk of explosion by shock, friction, fire or other sources of ignition.

**Safety Phrase(s):**

S16: Keep away from sources of ignition - No smoking.

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

**Poisons Schedule:** None allocated.

## 16. OTHER INFORMATION

(1) Material Safety Data Sheet – SILL

(2) 'Registry of Toxic Effects of Chemical Substances'. Ed. D. Sweet, US Dept. of Health & Human Services: Cincinnati, 2005.

This material safety data sheet has been prepared by SHE Department Solar.

**Reason(s) for Issue:**

5 Yearly Revised Primary SDS

Change to Product Name

This MSDS summaries to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since SILL cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Solar representative at the contact details on page 1.

Solar's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.