

date of issue : 24/06/2011

## Safety Data Sheet

### 1. Product and Company Identification

Product name :Hardener C-3

Name of supplier :SOLAR CO., LTD.

Address :1-7, Nunobiki-cho-2-chome, Chuo-ku, Kobe, Hyogo-Pref. 651-0097 JAPAN

Division :R & D DEPT.

Phone :+81-790-49-2366

FAX :+81-790-49-1588

Product code(MSDS NO) :EN870080-3

### 2. Hazards Identification

GHS classification and label elements of the product

GHS classification

PHYSICAL HAZARDS

Organic peroxides : Type D

HEALTH HAZARDS

Eye damage /eye irritation : Category 2

Specific target organ toxicity-single exposure : Category 1



Signal word : Danger

HAZARD STATEMENT

Heating may cause a fire

Causes eye irritation

Causes damage to organs after single exposure.

PRECAUTIONARY STATEMENT

Prevention

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear face protection.

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed: Call a POISON CENTER or doctor/physician.

If eye irritation persists: Get medical advice/attention.

Storage

Store locked up.

Disposal

Dispose of contents/container in accordance with local/national regulation.

### 3. Composition/Information on Ingredients

Substance/Preparation :Preparation

Ingredient name	content(%)	CAS No.	PRTR law No, Japan
Cyclohexanone peroxide	45 - 50	12262-58-7	
Triethyl phosphate	10 - 15	78-40-0	
Dimethyl phthalate	10 - 15	131-11-3	

Ethyl acetate	5 - 10	141-78-6	
Ethyl acetoacetate	5 - 10	141-97-9	
Silicon dioxide	10 - 15	Non Public	

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#### 4. First-Aid Measures

##### IF INHALED

Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.

##### IF ON SKIN

Never use solvent or thinner.

Wash with plenty of soap and water.

If you observe unusual symptom, have irritation/pain and/or feel unwell, seek medical advice.

##### IF IN EYES :

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

##### IF SWALLOWED

Rinse mouth.

Do NOT induce vomiting.

Immediately call a POISON CENTER or doctor/physician.

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#### 5. Fire-Fighting Measures

##### Suitable extinguishing media

Water spray or fog is preferred; if water not available use dry chemical, CO2 or regular foam.

##### Specific fire-fighting measures

Use appointed fire extinguisher.

Remove flammable matters quickly from nearby.

Apply water from a safe distance to cool and protect surrounding area.

##### Special protective equipment and precautions for fire-fighters

Fire extinguishing work has to be done from windward.

Wear proper protective equipment.

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#### 6. Accidental Release Measures

##### Personnel precautions, protective equipment and emergency procedures

Ventilate area after material pick up is complete.

Wear proper protective equipment.

Keep unauthorized personnel away.

##### Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

##### Methods and materials for neutralization, containment and cleaning up

Place in a covered container.

Use non-sparking tools to collect absorbed material.

Keep substance wet for later disposal.

##### Preventive measures for secondary accident

Prepare extinguishers before catching fire.

Keep substance wet using water spray.

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#### 7. Handling and Storage

##### Precautions for safe handling

##### Preventive measures

Use personal protective equipment as required.

Take precautionary measures against static discharge.

**Safety Measures/Incompatibility**

Handle in good ventilation.

Do not handle until all safety precautions have been read and understood.

**Conditions for safe storage, including any incompatibilities****Recommendation for storage**

Keep container tightly closed.

Protect from sunlight. Store in a well-ventilated place.

Storage temperature upper limit :30°C

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**8. Exposure Control/Personal Protection****Control value**

(Ethyl acetate)Japan control value (2004) <= 200ppm

**Adopted value**

(Ethyl acetate)JSOH(1995) 200ppm; 720mg/m<sup>3</sup>

(Dimethyl phthalate)

ACGIH(2005) TWA: 5mg/m<sup>3</sup> (Eye & URT irr)

(Ethyl acetate)

ACGIH(1979) TWA: 400ppm (URT & eye irr)

**Appropriate engineering controls**

Do not use in areas without adequate ventilation.

Exhaust/ventilator should be available.

**Protective equipment****Respiratory protection**

Wear respiratory protection.

**Hand protection**

Wear protective gloves.

**Eye protection**

Wear eye/face protection.

**Skin and body protection**

Wear protective gloves/clothing

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**9. Physical and Chemical Properties****Physical properties**

Appearance :paste

Color :colorless

**Phase change temperature**

Decomposition temperature :115°C (Cyclohexanone peroxide)

Flash point :No data

Auto-ignition temperature :No data

Specific gravity :ca 1.10

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**10. Stability and Reactivity****Possibility of hazardous reactions**

May occur self-exothermic decomposition from heat or contamination.

**Conditions to avoid**

Avoid contact with acid, alkali, amine, heavy metal or reducing agent.

Avoid contact with combustibles (wood, paper, clothing, etc.).

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**11. Toxicological Information**

Symptoms related to the physical, chemical and toxicological characteristics

**Acute toxicity**

Labor standard law, Japan; Toxic

Ethyl acetate

**Irritant properties**

## Skin corrosion/Irritation component(s) data

(Ethyl acetoacetate)

rabbit 510 mg open ; MILD

Delayed and immediate effects and also chronic effects from short- and long-term exposure

Specific target organ toxicity (single exposure cat.1)

(Ethyl acetate) respiratory apparatus/system

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12. Ecological Information

## Ecotoxicity

## Aquatic toxicity

(Dimethyl phthalate)

Fish (Cyprinodon variegatus) LC50=29mg/L/96hr (EPA\_Japan, 2002)

(Ethyl acetate)

Crustacea (Daphnia) EC50=164 mg/L/48hr (IUCLID, 2000)

## Water solubility

(Dimethyl phthalate)

0.43 g/100 ml (20 C) (ICSC, 2005)

(Ethyl acetate)

80 g/L (PHYSPROP Database, 2005)

(Ethyl acetoacetate)

2.86 g/100 ml (20 C) (ICSC, 2000)

## Persistence and degradability

(Dimethyl phthalate)

BOD\_Degradation : 93% (Registered chemicals safety check &amp; review data, Japan)

## Bioaccumulative potential

(Dimethyl phthalate)

log Pow=1.6 (PHYSPROP Database, 2005)

(Ethyl acetate)

log Pow=0.73 (ICSC, 1997)

(Ethyl acetoacetate)

log Pow=0.27 (ICSC, 2000)

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13. Disposal Considerations

## Waste residues

Avoid release to the environment (- if this is not the intended use).

Dispose of contents/container in accordance with local/national regulation.

## Industrial disposals control law, Japan

Organic P contents &gt; 1mg/L or Organic P extracts &gt; 1mg/L

Triethyl phosphate

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14. Transport Information

## UN No, UN CLASS

UN No :3106

UN CLASS :5.2

Proper shipping name :ORGANIC PEROXIDE TYPE D, SOLID

## ERG GUIDE NO :146

## Sea pollutants control law

Noxious Liquid ; Cat. Y :Dimethyl phthalate

Noxious Liquid ; Cat. Z :Ethyl acetate; Ethyl acetoacetate; Triethyl phosphate

## Special precautions in connection with transport or conveyance

Follow instruction in Handling &amp; Storage.

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15. Regulatory Information

Industrial Safety and Health law, Japan

Organic Solvents Class II :Ethyl acetate

Harmful substances to be indicated :Ethyl acetate

Chemical name et al should be informed :Ethyl acetate; Dimethyl phthalate; Silica

Fire protection law, Japan

Self-reactive substances : organic peroxides ; (limited qty) Gr.2/100kg

Ship cargo control law, Japan

Organic peroxides

Air cargo control law, Japan

Organic peroxides

Malodorants control law, Japan

TLVs at the border ; 3 - 20 ppm

Ethyl acetate

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## 16. Other Information/References

### Reference Book

Globally Harmonized System of classification and labelling of chemicals, (3rd ed., 2009), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 16th edit. UN

2008 EMERGENCY RESPONSE GUIDEBOOK(US DOT)

2011 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/monoeval/grlist.html>

Supplier's SDS

JIS Z 7250 2005

ezCric(Retrieval System/Japan Chemical Database Ltd.)

### Other information

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own test