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Safety Data Sheets

1. Product and Company Identification

Product name :Hi-Flex#951

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.

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Product code(SDS NO) :EN400951-3

2. Hazards identification

GHS classification and label elements of the product

GHS classification

PHYSICAL HAZARDS

Flammable solid : Category 1

HEALTH HAZARDS

Skin corrosion/irritation : Category 2

Eye damage /eye irritation : Category 2

Germ cell mutagenicity : Category 2

Carcinogenicity : Category 2

Reproductive toxicity : Category 1B

Specific target organ toxicity-single exposure : Category 1

Specific target organ toxicity-repeated exposure : Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment-acute toxicity : Category 3



Signal word : Danger

HAZARD STATEMENT

Flammable solid

Causes skin irritation.

Causes eye irritation

Suspected of causing genetic defects

Suspected of causing cancer

May damage fertility or the unborn child

Causes damage to organs after single exposure.

Causes damage to organs following repeated exposure.

Harmful to aquatic life

PRECAUTIONARY STATEMENT

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Use explosion-proof electrical/ventilating/lighting equipment.

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.

Avoid release to the environment.

Wear protective gloves/eye protection/face protection.

Use personal protective equipment as required.

Response

Get medical advice/attention if you feel unwell.

Take off contaminated clothing and wash before reuse.

IF ON SKIN: Wash with plenty of soap and water.

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

IF exposed or concerned: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use appropriate media other than water for extinction.

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
Unsaturated polyester resin	20 - 25	Non Public	-
Styrene	18	100-42-5	1-240
Cobalt naphthenate	<1.0	61789-51-3	1-132
Cobalt 2-ethylhexanoate		136-52-7	1-132
Xylene (Mixture of isomers)	<0.3	1330-20-7	1-080
Ethylbenzene	<1.0	100-41-4	1-053
Titanium dioxide	1 - 5	13463-67-7	-
Amorphous silica	0.1 - 1	7631-86-9	-
Extender · Hollow powder	50 - 55	Non Public	-
Additive	1 - 5	Non Public	-

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(or hair)

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.

5. Fire-fighting measures

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder or CO2.

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.

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.

Preventive measures for secondary accident
 Prepare extinguishers before catching fire.

7. Handling and Storage

Precautions for safe handling
 Preventive measures
 Use personal protective equipment as required.
 Take precautionary measures against static discharge.

Safety treatments
 Used waste or spray-dust has to be dipped in water until disposition.

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.

8. Exposure Controls/Personal Protection

Control parameters e.g. occupational exposure limit values or biological limit values
 Control value
 (Styrene)
 Japan control value (2004) <= 20ppm
 (Xylene (Mixture of isomers))
 Japan control value (2004) <= 50ppm

Adopted value
 (Ethylbenzene)
 JSOH(2001) 50ppm; 217mg/m³
 (Styrene)
 JSOH(1999) 20ppm; 85mg/m³ (dermal)
 (Xylene (Mixture of isomers))
 JSOH(2001) 50ppm; 217mg/m³
 (Cobalt 2-ethylhexanoate)
 JSOH(1992) 0.05mg-Co/m³
 (Cobalt naphthenate)
 JSOH(1992) 0.05mg-Co/m³
 (Ethylbenzene)
 ACGIH(1998) TWA: 100ppm
 STEL: 125ppm (URT irr; CNS impair; eye irr)

(Styrene)

ACGIH(1996) TWA: 20ppm

STEL: 40ppm (CNS impair; URT irr; periph neuropathy)

(Xylene (Mixture of isomers))

ACGIH(1992) TWA: 100ppm

STEL: 150ppm (URT & eye irr; CNS impair)

(Titanium dioxide)

ACGIH(1992) TWA: 10mg/m3 (LRT 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

9. Physical and Chemical Properties

Physical properties

Appearance :paste

Color :white

Flash point :31 (Closed style) (ref.value/Styrene)

Specific gravity :ca1.52

10. Stability and Reactivity

Stability

Stable under normal storage/handling conditions.

11. Toxicological Information

Symptoms related to the physical, chemical and toxicological characteristics

Acute toxicity

Oral toxicity component(s) data

(Ethylbenzene)

rat LD50=3500 mg/kg (EHC 186, 1996)

(Styrene)

rat LD50=5000 mg/kg (CERI_NITE hazard assessment data No.52, 2004)

(Xylene (Mixture of isomers))

rat LD50=3500 mg/kg (EPA_J assessment vol.1, 2002)

(Cobalt naphthenate)

rat LD50=3900 mg/kg (JPMA 5th ed.)

Inhalation toxicity component(s) data

(Ethylbenzene)

vapor : rat LC50=4000 ppm (ATSDR, 1999)

(Styrene)

vapor : rat LC50 = 2770 ppm/4hr (cal.)

Labor standard law, Japan; Toxic

Styrene; Xylene (Mixture of isomers); Cobalt 2-ethylhexanoate; Cobalt naphthenate

Irritant properties

Skin corrosion/Irritation component(s) data

(Ethylbenzene)

rabbit 15 mg/24H open ; MILD
(Styrene)

rabbit 500 mg open ; MILD
(Xylene (Mixture of isomers))

rabbit 500 mg/24H ; MODERATE
(Titanium dioxide)

human 0.3mg/3D-I ; MILD

Serious eye damage /irritation

Eye damage/irritation component(s) data

(Xylene (Mixture of isomers))

rabbit 87 mg ; MILD rabbit 5 mg/24H ; SEVERE

Mutagenic effects

(Styrene) ACGIH, 2001

Carcinogenic effects

(Ethylbenzene)

IARC-Gr.2B ; Possibly carcinogenic to humans.

(Styrene)

IARC-Gr.2B ; Possibly carcinogenic to humans.

(Xylene (Mixture of isomers))

IARC-Gr.3 ; Not Classifiable as a Human Carcinogen.

(Titanium dioxide)

IARC-Gr.2B ; Possibly carcinogenic to humans.

(Amorphous silica)

IARC-Gr.3 ; Not Classifiable as a Human Carcinogen.

(Ethylbenzene)

ACGIH-A3(1998) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

(Styrene)

ACGIH-A4(1996) : Not Classifiable as a Human Carcinogen

(Xylene (Mixture of isomers))

ACGIH-A4(1992) : Not Classifiable as a Human Carcinogen

(Titanium dioxide)

ACGIH-A4(1992) : Not Classifiable as a Human Carcinogen

(Ethylbenzene)

JSOH-2B; Insufficient Evidence of Carcinogenicity for Humans

(Styrene)

JSOH-2B; Insufficient Evidence of Carcinogenicity for Humans

Toxicity for reproduction

(Styrene) CERI/NITE hazard assessment No.52, 2004

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

Specific target organ toxicity (single exposure cat.1)

(Styrene) CNS (EHC 26, 1983)

Specific target organ toxicity (single exposure cat.3 respiratory irritation)

(Styrene) Respiratory tract irritation (EHC 26, 1983)

Specific target organ toxicity (repeated exposure cat.1)

(Styrene) respiratory apparatus/system; nerve/nervous system; blood/blood system; liver (

CERI/NITE hazard assessment, 2004)

Aspiration hazard

(Styrene) hydrocarbon, kinematic viscosity =0.772 mm²/s (25)

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Harmful to aquatic life

(Ethylbenzene)

Crustacea (Penaeus aztecus) LC50=0.4mg/L/96hr (CERI/NITE, 2006)
(Styrene)

Fish (fat head minnow) LC50=4.02 mg/L/96hr (CERI/NITE, 2004)
(Xylene (Mixture of isomers))

Fish (rainbow trout) LC50=3.3mg/L/96hr (CERI_NITE, 2005)
(Titanium dioxide)

Crustacea (Daphnia magna) EC50 > 1000mg/L/48hr (AQUIRE, 2003)

Water solubility

(Ethylbenzene)

0.015 g/100 ml (20 C) (ICSC, 2007)

(Styrene)

0.03 g/100 ml (20 C) (ICSC, 2006)

(Titanium dioxide)

none (HSDB, 2004)

(Cobalt naphthenate)

none (ICSC, 2000)

Persistence and degradability

(Ethylbenzene)

Easily degrade and rapidly vaporize (SIDS, 2005)

(Styrene)

BOD_Degradation : 100% (Registered chemicals data check & review, Japan)

Bioaccumulative potential

(Ethylbenzene)

log Kow=3.15 (PHYSPROP Database, 2005)

(Styrene)

log Kow=2.95 (PHYSPROP Database, 2005)

(Xylene (Mixture of isomers))

log Pow=3.16 (PHYSPROP Database, 2005)

13. Disposal Considerations

Disposal methods

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

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

14. Transport Information

UN No, UN CLASS

UN No :1325

UN CLASS :4.1

PG :III

Proper shipping name :FLAMMABLE SOLID, ORGANIC, N.O.S.

ERG GUIDE NO :133

Special precautions in connection with transport or conveyance

Follow instruction in Handling & Storage.

15. Regulatory Information

Industrial Safety and Health law, Japan

Organic Solvents Class II :Styrene

Harmful substances to be indicated :Styrene; Ethylbenzene

Flammable

Chemical name et al should be informed :Ethylbenzene;Styrene;Xylene (Mixture of

isomers);Cobalt 2-ethylhexanoate;Cobalt naphthenate;Amorphous silica: Titanium dioxide

PRTR law, Japan

Listed chemicals Gr.1 :Styrene

Fire protection law, Japan

Flammable solids : flammable solids (Class III)
Ship cargo control law, Japan
Flammable solids, self-reactive substances and solid desensitised explosives
Air cargo control law, Japan
Flammable solids, self-reactive substances and solid desensitised explosives
Chemical Substances Control Law, Japan
Priority Assessment Chemical Substances :Styrene
Malodorants control law, Japan
TLVs at the border ; 0.4 - 2 ppm
Styrene
TLVs at the border ; 1 - 5 ppm
Xylene (Mixture of isomers)

16. Other information

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (4th ed., 2011), UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 17th edit. UN
2012 EMERGENCY RESPONSE GUIDEBOOK(US DOT)
2011 TLVs and BEIs. (ACGIH)
<http://monographs.iarc.fr/monoeval/grlist.html>
Supplier's data/information

Other information

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