

SAMHWA PAINTS		MATERIAL SAFETY DATA SHEET	Date of Issue		2015.10.22	
CODE			Renewal Date		2016.10.01	
3733964			Renewal No.		1	Page

1. CHEMICAL PRODUCT INFORMATION

Product Name	SCH840 FAST HARDENER	Color	
Application	URETHANE HARDNER FOR AUTOMOTIVE REFINISH		
Hazard	Harmful / Flammable Liquid		
Manufacture	SAMHWA PAINTS IND.CO.,LTD.	Telephone NO.	82-31- 499 - 0394
Address	178, Byeolmang-ro, Danwon-gu, Ansan-si, Gyeonggi-do, Korea	Department	

2. HAZARDS IDENTIFICATION

1. Classification of the substance

- ① FLAMMABLE LIQUIDS - category 2
- ② ASPIRATION HAZARD - category 1
- ③ SKIN CORROSION/IRRITATION - category 2(Skin irritant)
- ④ SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - category 3(respiratory)
- ⑤ SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - category 2
- ⑥ REPRODUCTIVE TOXICITY - category 1B
- ⑦ SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - category 2
- ⑧ CARCINOGENICITY - category 1B
- ⑨ ACUTE TOXICITY (ORAL) - category 4

2. GHS warning label elements, including precautionary statements



① Symbol :

② Signal word : Danger

③ Hazard statements : May damage fertility or the unborn child
 Harmful if swallowed
 Highly flammable liquid and vapour
 May cause cancer
 (Specific target organ-stomach, lung, heart) May cause damage to organs
 May cause respiratory irritation
 May cause damage to organs(Specific target organ-stomach, lung, heart) through
 prolonged or repeated exposure
 Causes skin irritation
 May be fatal if swallowed and enters airways

④ Precautionary statements :

Prevention- Do not handle until all safety precautions have been read and understood.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting/etc/ equipment.
 Obtain special instructions before use.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Use only outdoors or in a wellventilated area.
 Keep container tightly closed.
 Take precautionary measures against static discharge.
 Do not eat, drink or smoke when using this product.
 Wash thoroughly after handling.
 Wear protective gloves/protective clothing/eye protection/face protection.

SAMHWA PAINTS		MATERIAL SAFETY DATA SHEET	Date of Issue		2015.10.22	
			Renewal Date		2016.10.01	
CODE	3733964		Renewal No.		1	Page

④ Precautionary statements :

Prevention- Use only non-sparking tools.

Response- Do NOT induce vomiting.
 Take off contaminated clothing and wash it before reuse.
 IF exposed or concerned: Get medical advice/attention.
 If skin irritation occurs: Get medical advice/attention.
 IF exposed: Call a POISON CENTER or doctor/physician.
 IF ON SKIN: Wash with plenty of soap and water.
 Specific treatment (see on this label).
 In case of fire: Use fire extinguisher for extinction.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
 Rinse mouth.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 Get medical advice/attention if you feel unwell.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Storage- Store in a well-ventilated place. Keep cool.
 Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.

Disposal- Dispose of contents/container to relate laws and regulations.

3. CHEMICAL COMPOSITION

Chemical Name	CAS NO.	Portion(%)	Remarks
o-Xylene	95-47-6	1 ~ 5%	
Solvent naphtha (petroleum), light arom.	64742-95-6	1 ~ 10%	
5-Isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcycl homopolymer	53880-05-0	11 ~ 20%	
1,3-Butanediol reaction products with 1,6-diisocyanatohexane	187852-79-5	31 ~ 40%	
Xylene	1330-20-7	1 ~ 5%	
n-Butyl acetate	123-86-4	1 ~ 10%	
1,1',1''-[Methylidynetris(oxy)trisethane	122-51-0	1 ~ 10%	

SAMHWA PAINTS		MATERIAL SAFETY DATA SHEET	Date of Issue		2015.10.22	
CODE			Renewal Date		2016.10.01	
3733964			Renewal No.		1	Page

3. CHEMICAL COMPOSITION

Chemical Name	CAS NO.	Portion(%)	Remarks
Toluene	108-88-3	26 ~ 30%	
Propylene glycol methyl ether acetate	108-65-6	1 ~ 10%	
m-xylene	108-38-3	1 ~ 5%	
p-Xylene	106-42-3	1 ~ 5%	
Ethylbenzene	100-41-4	1 ~ 10%	

4. HEALTH HAZARD INFORMATION

1. Eye contact
Wash off immediately with plenty of water, also under the eyelids, for at least 20 minutes.
Call a physician immediately.
2. Skin contact
Remove the contaminated clothes and the skin will be washed with water and soap.
Do not use solvents.
3. Inhalation
Move to fresh air and if he/she not breathes perform artificial respiration.
Consult a physician if necessary.
4. Ingestion
Do not induce vomiting unless it is indicated by medical personnel.
Never give anything by oral tract to an unconscious. Get medical attention if symptoms appear.
5. Note to physician
Very small quantities of the product reached in lungs may be fatale. Ingestion of the product may cause chemical irritation that may diffuse to lungs and cause edema. Check carefully the victim and apply intubations in all ingestion cases for all important amounts.

5. FIRE FIGHTING MEASURES

1. Flash point : 13.53 °C
2. Ignition temp : Not determined
3. Upper explosion limit / Lower explosion limit : Not determined
4. The Fire Service Act : Fourth grade 1st. Petroleum

SAMHWA PAINTS		MATERIAL SAFETY DATA SHEET	Date of Issue		2015.10.22	
			Renewal Date		2016.10.01	
CODE	3733964		Renewal No.		1	Page

5. Fire extinguisher : CO2, Powder, Halogen Fire extinguisher and Sand etc.
6. Fire and explosion Method of extinguishing and equipment:
Wear suitable protective equipment Use product with caution around heat, sparks, pilot lights, static electricity, and open flame.
Due to vapor is heavier than air, keep the distance from the ignition source pour into the fresh air.
Remove promptly flammable material. Put out a fire at once with prepared fire extinguisher.
7. Hazardous materials in combustion:
Could be generated complexed mixture like solid and gas containing CO, SO2 etc.
Unidentified organic and inorganic compound.
8. Extinguishing method which must not used for safety : Not applicable

6. ACCIDENTAL RELEASE MEASURES

1. Personal precautions
Evacuate useless personnel, isolate the heat and flame sources, ventilate and wet the area if is possible.
All personnel must be protected against vapours inhalation and against skin and eyes contact.
2. Methods for cleaning up
Absorb with dry earth, sand or other non-combustible material and precede according decontamination regulation.
Recovered product will be stored in metallic drums with removable lid or metallic containers, which will be sent to incineration.
3. Environmental precautions
Do not let the product to reach water, drain and earth. Prevent the extending in soil.
Prevent entry into sewers, basements or confined areas; dike if needed

7. HANDLING AND STORAGE

1. Handling
Avoid contact with skin or eyes. Use only up well-ventilated areas.
Avoid breathing vapor. Do not take internally. Take precautionary measures against static is charges.
2. Storage
The product must be kept in original container tightly closed. Store between 5~35°C in dry, well-ventilated place away from source of heat, ignition and direct sunlight.
Solvent vapours are heavier than air and spread along floors. Vapours may form explosive mixtures. No smoking.
3. Other precautions
Emergency showers and eye wash stations should be readily accessible.
Adhere to work practice rules established by government regulations

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

1. Exposure limit values

Chemical Name	Cas No	Interior provision	ACGHI
o-Xylene	95-47-6	TWA : 100 ppm 435 mg/m ³ STEL : 150 ppm 655 mg/m ³	No data
Solvent naphtha (petroleum), light arom.	64742-95-6	No data	No data
5-Isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane homopolymer	53880-05-0	No data	Not available
1,3-Butanediol reaction products with 1,6-diisocyanatohexane	187852-79-5	No data	No data
Xylene	1330-20-7	TWA : 100 ppm 435 mg/m ³ STEL : 150 ppm 655 mg/m ³	TWA 100 ppm
n-Butyl acetate	123-86-4	TWA : 150 ppm 710 mg/m ³ STEL : 200 ppm 950 mg/m ³	TWA 150 ppm
1,1',1''-[Methylidynetris(oxy)trisethane	122-51-0	No data	No data
Toluene	108-88-3	TWA : 50 ppm 188 mg/m ³ STEL : 150 ppm 560 mg/m ³	TWA 50 ppm

SAMHWA PAINTS		MATERIAL SAFETY DATA SHEET	Date of Issue		2015.10.22	
			Renewal Date		2016.10.01	
CODE	3733964		Renewal No.		1	Page

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

1. Exposure limit values

Chemical Name	Cas No	Interior provision	ACGHI
Propylene glycol methyl ether acetate	108-65-6	No data	No data
m-xylene	108-38-3	TWA : 100 ppm 435 mg/m ³ STEL : 150 ppm 655 mg/m ³	No data
p-Xylene	106-42-3	No data	No data
Ethylbenzene	100-41-4	TWA : 100 ppm 435 mg/m ³ STEL : 125 ppm 545 mg/m ³	TWA 100 ppm

2. Environmental exposure control

Technical conditions regarding atmosphere protection. Determination of pollutants emission produced by stationary sources rules.

3. Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment

4. Eye protection: Wear eye/face protection such as chemical goggles or face shield

5. Hand protection: For prolonged or repeated contact use solvent protective gloves. Barrier reams may help to protect the exposed areas of hand. However they should not be applied once exposure has occurred. Hand should be washed after contact

6. Skin protection: Personnel should wear protective clothing and antistatic footwear.

7. Additional: Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water

9. PHYSICAL AND CHEMICAL PROPERTIES

- | | |
|------------------------------------------------|-------------------------------------|
| 1. Appearance : colorless and transparent liqu | 8. Oxidising properties : No data |
| 2. Odor : solvent specific | 9. Vapor pressure : No data |
| 3. pH : Not applicable | 10. Specific gravity : 0.991 |
| 4. Solubility : Water-insoluble | 11. Partition coefficient : No data |
| 5. Boiling point : No data | 12. Vapor density : No data |
| 6. Melting point : No data | 13. Viscosity(25°C) : FC#4 11s |
| 7. Explosive properties : No data | 14. Molecular weight : No data |

10. STABILITY AND REACTIVITY

1. Chemical stability

The product is stable if is kept in original recipient and according with recommendation.

2. Condition to avoid

Avoid all possible sources of heat, electrostatic discharges, ignition(spark or flame).

Avoid storage at temperature higher than 35°C and direct exposure in the sunlight.

3. Materials to avoid

Strong oxidative substances, strong acid, and alkaline solutions may give exothermic reactions in contact with this product.

4. Hazardous decomposition products

Thermo oxidative decomposition gives carbon monoxide, carbon dioxide, nitrogen oxides and a dense smoke, which contain other unidentified decomposition products. If this product is heated up to its decomposition temperature may lead to explosion.

SAMHWA PAINTS		MATERIAL SAFETY DATA SHEET	Date of Issue		2015.10.22	
			Renewal Date		2016.10.01	
CODE	3733964		Renewal No.		1	Page

11. TOXICOLOGICAL INFORMATION

1. Toxicity Information

Chemical Name	LD50.Oral	LD50.Skin	LD50.Inhalation (gas)	LD50.Inhalation (vapour)	LD50.Inhalation (mist)
o-Xylene	LD50 3608 mg/kg Rat	LD50 14100 mg/kg rabbit	LC50 5303 ppm 4 hr Rat	LC50 5303 ppm 4 hr Rat	LC50 5303 ppm 4 hr Rat
Solvent naphtha (petroleum), light arom.	LD50 = 8400 mg/kg Rat	LD50 > 2000 mg/kg Rabbit	Mist LC50 = 3400 ppm 4 hr Rat	Mist LC50 = 3400 ppm 4 hr Rat	Mist LC50 = 3400 ppm 4 hr Rat
5-Isocyanato-1-(isocyanatomethyl)-1,3,3-homopolymer	No data	No data	No data	No data	No data
1,3-Butanediol reaction products with 1,6-diisocyanatohexane	No data	No data	No data	No data	No data
Xylene	LD50 4300 mg/kg Rat	LD50 4350 mg/kg Rabbit	LC50 47653 mg/ℓ 4 hr rat	LC50 47653 mg/ℓ 4 hr rat	Steam LC50 6700 ppm 4 hr Rat
n-Butyl acetate	LD50 = 13100 mg/kg Rat	LD50 > 17600 mg/kg Rabbit	LD50 > 21.1 mg/kg Rat	LD50 > 21.1 mg/kg Rat	LD50 > 21.1 mg/kg Rat
1,1',1''-[Methylidynetris(oxy)trisethane	LD50 = 7060 mg/kg Rat	LD50 = 1800 mg/kg	Steam LC50 = 4000 ppm 8 hr Rat	Steam LC50 = 4000 ppm 8 hr Rat	Steam LC50 = 4000 ppm 8 hr Rat
Toluene	LD50 636 mg/kg Rat	LD50 12124 mg/kg Rat	LC50 28.1 mg/ℓ 4 hr Rat	LC50 28.1 mg/ℓ 4 hr Rat	LC50 12.5 mg/ℓ 4 hr Rat
Propylene glycol methyl ether acetate	LD50 = 8532 mg/kg Rat	LD50 > 5000 mg/kg Rabbit	Steam LC50 = 4345 ppm 6 hr Rat	Steam LC50 = 4345 ppm 6 hr Rat	Steam LC50 = 4345 ppm 6 hr Rat
m-xylene	LD50 5011 mg/kg Rat	LD50 12180 mg/kg Rabbit	Steam LC50 5984 ppm 6 hr Rat	Steam LC50 5984 ppm 6 hr Rat	Steam LC50 5984 ppm 6 hr Rat
p-Xylene	No data	No data	No data	No data	No data
Ethylbenzene	LD50 = 3500 mg/kg Rat	LD50 = 15400 mg/kg Rabbit	Steam LC50 = 4000 ppm 4 hr Rat	Steam LC50 = 4000 ppm 4 hr Rat	Steam LC50 = 4000 ppm 4 hr Rat

12. ECOLOGICAL INFORMATION

1. Ecological Information

Chemical Name	LC50.fish	LC50.water fleas	LC50.algae
o-Xylene	LC50 16.4 mg/ℓ 96 hr	No data	ErC50 0.8 mg/ℓ 72 hr
Solvent naphtha (petroleum), light arom.	LC50 = 9.22 mg/ℓ 96 hr	EC50 = 6.14 mg/ℓ 48 hr Daphnia magna	EC50 = 19 mg/ℓ 72 hr
5-Isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane homopolymer	No data	No data	No data
1,3-Butanediol reaction products with 1,6-diisocyanatohexane	No data	No data	No data
Xylene	LC50 3.3 mg/ℓ 96 hr	LC50 190 mg/ℓ 96 hr	No data
n-Butyl acetate	LC50 = 62 mg/ℓ 96 hr	LC50 = 32 mg/ℓ 48 hr	No data
1,1',1''-[Methylidynetris(oxy)trisethane	LC50 = 592 mg/ℓ 96 hr Leuciscus	LC50 = 372.700 mg/ℓ 48 hr	EC50 = 225.741 mg/ℓ 96 hr
Toluene	LC50 24 mg/ℓ 96 hr Oncorhynchus	EC50 11.5 mg/ℓ 48 hr Daphnia magna	No data
Propylene glycol methyl ether acetate	LC50 ≥ 100 mg/ℓ 96 hr Oryzias	EC50 = 373 mg/ℓ 48 hr Daphnia magna	EC50 ≥ 1000 mg/ℓ 72 hr
m-xylene	LC50 16 mg/ℓ 96 hr	EC50 2.3 mg/ℓ 48 hr	EC50 4.9 mg/ℓ 72 hr
p-Xylene	No data	No data	No data
Ethylbenzene	LC50 = 9.09 mg/ℓ 96 hr	LC50 = 0.4 mg/ℓ 96 hr	No data

SAMHWA PAINTS		MATERIAL SAFETY DATA SHEET	Date of Issue		2015.10.22
			Renewal Date		2016.10.01
CODE	3733964		Renewal No.	1	Page

2. Soil mobility : Not known
3. Persistence and degradability
There is no specific data available on the product itself. The product should not be allowed to enter drains or watercourses or be deposited where they can affect ground or surface waters.
4. Potential bioaccumulation : Be possible.

13.DISPOSAL CONSIDERATION

1. Relevant insurance of legislation
Dispose of in accordance with local regulations
2. Waste removal measures
Waste must be disposed of in accordance with state and local environmental regulations.
3. Direction for the waste disposal
Preferred options for disposal are recycling, incineration with energy recovery, and landfill.

14.TRANSPORT INFORMATION

1. Classification by shipping transportation dangerous substance and regulation of storage :
2. Direction for transport
The product must be kept in original container tightly closed and transport at normal temperature.
3. International Maritime Dangerous Goods Code
U.N Number : 1263
Shipping name : Paint
Hazard class : 3
Packing group : 2
4. Marine pollutant : Not Applicable
5. Special precautions for user related to transport or transportation measures
 - Ems FIRE SCHEDULE : F-E
 - EmS SPILLAGE SCHEDULE : S-E

15.REGULATORY INFORMATION

1. Article of KOREA OCCUPATIONAL SAFETY _HEALTHY AGENCY : Not determined.
2. Article of Harmful Chemical Substance : Not applicable
3. Classify of The Fire Service Act : Fourth grade 1st.Petroleum

16.OTHER INFORMATION

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release is not to be considered a warranty or quality specification

The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAMHWA PAINTS		MATERIAL SAFETY DATA SHEET	Date of Issue		2015.10.22	
			Renewal Date		2016.10.01	
CODE	3733964		Renewal No.	1	Page	8 / 8

16. OTHER INFORMATION

This information is based on technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.