

SAMHWA PAINT		MATERIAL SAFETY DATA SHEET	Date of Issue	2016.10.26	
CODE	3734138		Renewal Date	. .	
			Renewal No.	Page	1 / 7

1. CHEMICAL PRODUCT INFORMATION

Product Name	STARCLEAR SC2100HS<A>		Color	
Chemical description	Automotive refinish coatings / Clear			
Application	CLEARCOAT FOR AUTOMOTIVE REFINISH			
Hazard	Harmful / Flammable Liquid			
Manufacture	SAMHWA PAINT IND.CO.,LTD.	Telephone NO.	82-31- 499 - 0394	
Address	178, Byeolmang-ro, Danwon-gu, Ansan-si, Gyeonggi-do, Korea			

2. HAZARDS IDENTIFICATION

1. Classification of the substance

- ① FLAMMABLE LIQUIDS - category 3
- ② SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - category 1
- ③ CARCINOGENICITY - category 1B
- ④ REPRODUCTIVE TOXICITY - category 1B
- ⑤ SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - category 2

2. GHS warning label elements, including precautionary statements



① Symbol :

② Signal word : Danger

③ Hazard statements : May damage fertility or the unborn child
 May cause cancer
 May cause damage to organs(Specific target organ-stomach, lung, heart) through prolonged or repeated exposure
 Flammable liquid and vapour
 (Specific target organ-stomach, lung, heart) Causes damage to organs

④ Precautionary statements :

Prevention- Do not handle until all safety precautions have been read and understood.
 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.
 Keep container tightly closed.
 Take precautionary measures against static discharge.
 Do not eat, drink or smoke when using this product.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Use only non-sparking tools.
 Wash thoroughly after handling.

Response- IF exposed or concerned: Get medical advice/attention.
 IF exposed: Call a POISON CENTER or doctor/physician.
 In case of fire: Use fire extinguisher for extinction.
 Specific treatment (see on this label).
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Get medical advice/attention if you feel unwell.

Storage- Store in a well-ventilated place. Keep cool.

SAMHWA PAINT		MATERIAL SAFETY DATA SHEET	Date of Issue	2016.10.26	
CODE	3734138		Renewal Date	. .	
			Renewal No.	Page	2 / 7

④ Precautionary statements :

Storage- Store locked up.

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

3.CHEMICAL COMPOSITION

Chemical Name	CAS NO.	Portion(%)	Remarks
Solvent naphtha (petroleum), light arom.	64742-95-6	1 ~ 10%	
Dimethyl carbonate	616-38-6	1 ~ 10%	
Styrene, isobutyl methacrylate, methyl methacrylate, ethyl acrylate, acrylic acid copolymer	168763-44-8	1 ~ 10%	
Xylene	1330-20-7	1 ~ 5%	
n-Butyl acetate	123-86-4	11 ~ 20%	
Ethyleneglycol monoethyl ether acetate	111-15-9	1 ~ 10%	
Propylene glycol methyl ether acetate	108-65-6	1 ~ 10%	
m-xylene	108-38-3	1 ~ 5%	
4-Methyl-2-pentanone	108-10-1	1 ~ 10%	
Styrene, n-butyl methacrylate, n-butyl acrylate, methyl methacrylate, 2-hydroxyethyl methacrylate, methacrylic acid copolymer	104318-70-9	11 ~ 20%	
Ethylbenzene	100-41-4	1 ~ 10%	

SAMHWA PAINT		MATERIAL SAFETY DATA SHEET	Date of Issue	2016.10.26	
CODE	3734138		Renewal Date	. .	
			Renewal No.	Page	3 / 7

3. CHEMICAL COMPOSITION

Chemical Name	CAS NO.	Portion(%)	Remarks
No data	-	11 ~ 20%	

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 : 30.146 °C
2. Ignition temp : Not determined
3. Upper explosion limit / Lower explosion limit : Not determined
4. The Fire Service Act : Fourth grade 2nd.Petroleum
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

SAMHWA PAINT		MATERIAL SAFETY DATA SHEET	Date of Issue		2016.10.26
			Renewal Date		. .
CODE	3734138		Renewal No.		Page

6. ACCIDENTAL RELEASE MEASURES

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
Solvent naphtha (petroleum), light arom.	64742-95-6	No data	No data
Dimethyl carbonate	616-38-6	No data	No data
Styrene, isobutyl methacrylate, methyl methacrylate, ethyl acrylate, acrylic acid copolymer	168763-44-8	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
Ethyleneglycol monoethyl ether acetate	111-15-9	TWA : 5 ppm 27 mg/m ³	TWA 5 ppm
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
4-Methyl-2-pentanone	108-10-1	TWA : 50 ppm 205 mg/m ³ STEL : 75 ppm 300 mg/m ³	TWA 50 ppm
Styrene, n-butyl methacrylate, n-butyl acrylate, methyl methacrylate, 2-hydroxyethyl methacrylate, methacrylic acid	104318-70-9	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
No data	-	No data	No data

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

SAMHWA PAINT		MATERIAL SAFETY DATA SHEET	Date of Issue		2016.10.26	
			Renewal Date		. .	
CODE	3734138		Renewal No.		Page	5 / 7

after contact

- Skin protection: Personnel should wear protective clothing and antistatic footwear.
- 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 : 0.996 |
| 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) : 33s (FC#4) |
| 7. Explosive properties : No data | 14. Molecular weight : No data |

10. STABILITY AND REACTIVITY

- Chemical stability**
The product is stable if is kept in original recipient and according with recommendation.
- 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.
- Materials to avoid**
Strong oxidative substances, strong acid, and alkaline solutions may give exothermic reactions in contact with this product.
- 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.

11. TOXICOLOGICAL INFORMATION

1. Toxicity Information

Chemical Name	LD50.Oral	LD50.Skin	LD50.Inhalation (gas)	LD50.Inhalation (vapour)	LD50.Inhalation (mist)
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
Dimethyl carbonate	LD50 = 13000 mg/kg Rat	LD50 = 5000 mg/kg Rabbit	LC50 = 140 mg/l 4 hr Rat	LC50 = 140 mg/l 4 hr Rat	LC50 = 140 mg/l 4 hr Rat
Styrene, isobutyl methacrylate, methyl methacrylate, ethyl acrylate, acrylic	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
Ethyleneglycol monoethyl ether acetate	LD50 = 2700 mg/kg Rat	No data	LC50 = 12.1 mg/l Rat (8hr)	LC50 = 12.1 mg/l Rat (8hr)	LC50 = 12.1 mg/l Rat (8hr)
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

SAMHWA PAINT		MATERIAL SAFETY DATA SHEET	Date of Issue		2016.10.26	
			Renewal Date		. .	
CODE	3734138		Renewal No.		Page	6 / 7

11. TOXICOLOGICAL INFORMATION

1. Toxicity Information

Chemical Name	LD50.Oral	LD50.Skin	LD50.Inhalation (gas)	LD50.Inhalation (vapour)	LD50.Inhalation (mist)
4-Methyl-2-pentanone	LD50 = 2080 mg/kg Rat	LD50 > 16000 mg/kg rabbit	LC50 = 8.2~16.4 mg / l Rat	LC50 = 8.2~16.4 mg / l Rat	LC50 = 8.2~16.4 mg / l Rat
Styrene, n-butyl methacrylate, n-butyl acrylate, methyl methacrylate,	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
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
Dimethyl carbonate	No data	No data	No data
Styrene, isobutyl methacrylate, methyl methacrylate, ethyl acrylate, acryl	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
Ethyleneglycol monoethyl ether acetate	LC50 = 40 mg / l 96 hr	No data	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
4-Methyl-2-pentanone	LC50 = 540 mg / l 96 hr	EC50 = 170 mg / l 48 hr	No data
Styrene, n-butyl methacrylate, n-butyl acrylate, methyl methacrylate, 2-hy	No data	No data	No data
Ethylbenzene	LC50 = 9.09 mg / l 96 hr	LC50 = 0.4 mg / l 96 hr	No data

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.

SAMHWA PAINT		MATERIAL SAFETY DATA SHEET	Date of Issue	2016.10.26	
CODE	3734138		Renewal Date	. .	
			Renewal No.	Page	7 / 7

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 : 3
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 2nd.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.

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