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1. CHEMICAL PRODUCT INFORMATION

| | | | |
|--------------|---|---------------|-------------------|
| Product Name | C01LX5100HF PCCL-0075-1N Z7870 | Color | Z7870 |
| Application | PCM Print Clear 8. Coatings and paints, thinners, paints removers 8.1 Oil paint | | |
| 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 3
- ② ASPIRATION HAZARD - category 1
- ③ SKIN CORROSION/IRRITATION - category 2(Skin irritant)
- ④ CARCINOGENICITY - category 1B
- ⑤ GERM CELL MUTAGENICITY - category 1B
- ⑥ REPRODUCTIVE TOXICITY - category 1B
- ⑦ ACUTE TOXICITY (ORAL) - category 2
- ⑧ ACUTE TOXICITY (INHALATION-VAPOR) - category 3
- ⑨ HAZARDOUS TO THE AQUATIC ENVIRONMENT(CHRONIC HAZARD) - chronic 2

2. GHS warning label elements, including precautionary statements



① Symbol :

② Signal word : Danger

③ Hazard statements : Toxic if inhaled

Causes skin irritation

May cause cancer(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)

Flammable liquid and vapor

May damage fertility or the unborn child(state specific effect if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)

May be fatal if swallowed and enters airways

Toxic to aquatic life with long lasting effects

Fatal if swallowed

May cause hereditary defects(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)

④ Precautionary statements :

Prevention- Wash...thoroughly after handling.

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

Avoid breathing dust/fume/gas/mist/vapours/spray.

Use explosion-proof[electrical/ventilating/lighting]equipment.

Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Obtain special instructions before use.

Use only outdoors or in a wellventilated area.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Keep container tightly closed.

Ground and bond container and receiving equipment

Use non-sparking tools.

Take precautionary measures against static discharge.

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

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④ Precautionary statements :

Prevention- Avoid release to the environment.

Response- Do NOT induce vomiting.

Call a POISON CENTER or doctor/physician.

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.

Specific treatment (see on this label).

IF ON SKIN(or hair) : Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

IF ON SKIN : Wash with plenty of water/...

Collect spillage.

Rinse mouth.

IF INHALED : Remove person to fresh air and keep comfortable for breathing.

In case of fire: Use Suitable extinguishing media for extinction.(Refer Section MSDS 5)

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 |
|---|-------------|---------------------------------|---------|
| 3-Ethoxypropanoic acid ethyl ester | 763-69-9 | More than 1 ~ Under 10 % | |
| Methylated 1,3,5-triazine-2,4,6-triamine, formaldehyde polymer | 68002-20-0 | More than 11 ~ Under 20 % | |
| 2-Propanol | 67-63-0 | More than 0.1 ~ Under 1 % | |
| Solvent naphtha (petroleum), light arom. | 64742-95-6 | More than 11 ~ Under 20 % | |
| Solvent naphtha (petroleum), heavy arom. | 64742-94-5 | More than 1 ~ Under 10 % | |
| Trimethylolpropane-neopentyl glycol-1,6-hexanediol-phthalic anhydride-adipic acid copolymer | 64385-79-1 | More than 11 ~ Under 20 % | |
| Silicon dioxide | 112926-00-8 | More than 1 ~ Under 10 % | |
| Pentanedioic acid, dimethyl ester | 1119-40-0 | More than 1 ~ Under 10 % | |
| Propylene glycol methyl ether acetate | 108-65-6 | More than 1 ~ Under 10 % | |
| Ethylbenzene | 100-41-4 | More than 0.1 ~ Under 1 % | |

4.HEALTH HAZARD INFORMATION

1. Eye contact

Wash off immediately with plenty of water, also under the eyelids, for at least 20 minutes.

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4.HEALTH HAZARD INFORMATION

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 : 55 °C

2. Ignition temp : Not determined

3. Upper expollosion 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

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.

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7. HANDLING AND STORAGE

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 | ACGIH |
|---|-------------|---|--------------------------|
| 3-Ethoxypropanoic acid ethyl ester | 763-69-9 | No data | No data |
| Methylated 1,3,5-triazine-2,4,6-triamine, formaldehyde polymer | 68002-20-0 | No data | No data |
| 2-Propanol | 67-63-0 | TWA : 200 ppm 480 mg/m ³ STEL : 400 ppm 980 mg/m ³ | STEL 400 ppm TWA 200 ppm |
| Solvent naphtha (petroleum), light arom. | 64742-95-6 | No data | No data |
| Solvent naphtha (petroleum), heavy arom. | 64742-94-5 | No data | No data |
| Trimethylolpropane-neopentyl glycol-1,6-hexanediol-phthalic anhydride-adipic acid copolymer | 64385-79-1 | No data | No data |
| Silicon dioxide | 112926-00-8 | TWA : 10 mg/m ³ | No data |
| Pentanedioic acid, dimethyl ester | 1119-40-0 | No data | No data |
| Propylene glycol methyl ether acetate | 108-65-6 | 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

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9. PHYSICAL AND CHEMICAL PROPERTIES

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|--|-------------------------------------|
| 1. Appearance : colored and transparent liquid | 8. Oxidising properties : No data |
| 2. Odor : solvent specific | 9. Vapor pressure : No data |
| 3. pH : Not applicable | 10. Specific gravity : 1.07 |
| 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) : 100±15SEC |
| 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) |
|---|----------------------------------|---------------------------|---------------------------|----------------------------|---------------------------|
| 3-Ethoxypropanoic acid ethyl ester | LD50 = 3200 mg/kg Rat | LD50 = 10000 mg/kg rabbit | No data | No data | No data |
| Methylated 1,3,5-triazine-2,4,6-triamine, formaldehyde polymer | LD50 12.3 ml/kg Rat | No data | No data | No data | No data |
| 2-Propanol | LD50 = 4710mg/kg Rat | LD50 = 12870 mg/kg rabbit | 해당없음 | LC50 = 72600 mg/ℓ 4 hr Rat | 해당없음 |
| Solvent naphtha (petroleum), light arom. | LD50 = 8400 mg/kg Rat | LD50 > 2000 mg/kg Rabbit | NO DATA | LC50 = 5.160 mg/ℓ 4 hr Rat | NO DATA |
| Solvent naphtha (petroleum), heavy arom. | LD50 > 5000 mg/kg Rat | LD50 > 2000 mg/kg Rabbit | NO DATA | NO DATA | NO DATA |
| Trimethylolpropane-neopentyl glycol-1,6-hexanediol-phthalic anhydride-adipic acid copolymer | No data | No data | No data | No data | No data |
| Silicon dioxide | LD50 = 3300 mg/kg (Species : not | LD50 = 5000 mg/kg | Steam LC50 > 2.0 mg/ℓ Rat | Steam LC50 > 2.0 mg/ℓ Rat | Steam LC50 > 2.0 mg/ℓ Rat |

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| 11.TOXICOLOGICAL INFORMATION | | | | | |
|---|---------------------------------|---------------------------------------|------------------------|---------------------------------------|-----------------------|
| 1. Toxicity Information | | | | | |
| Chemical Name | LD50.Oral | LD50.Skin | LD50.Inhlation (gas) | LD50.Inhlation (vapour) | LD50.Inhlation (mist) |
| Pentanedioic acid, dimethyl ester | LD50 = 1920 mg/kg Rat | LD50 = 8500 mg/kg Rat | 해당없음 | 자료없음 | 해당없음 |
| Propylene glycol methyl ether acetate | LD50 = 8532 mg/kg Rat | LD50 > 5000 mg/kg Rabbit | 해당없음 | Steam LC50 = 4345 ppm 6 hr Rat | 해당없음 |
| Ethylbenzene | LD50 = 3500 mg/kg Rat | LD50 > 20000 mg/kg Rabbit | NO DATA | LC50=4000 ppm 4 hr Rat (Equivalents : | NO DATA |
| | | | | | |
| 12.ECOLOGICAL INFORMATION | | | | | |
| 1. Ecological Information | | | | | |
| Chemical Name | LC50.fish | LC50.water fleas | LC50.algae | | |
| 3-Ethoxypropanoic acid ethyl ester | LC50 = 88 mg/ℓ 96 hr Pimephales | LC50 = 970 mg/ℓ 48 hr Daphnia magna | No data | | |
| Methylated 1,3,5-triazine-2,4,6-triamine, formaldehyde polymer | No data | No data | No data | | |
| 2-Propanol | LC50 > 100 mg/ℓ 96 hr | 자료없음 | EC50 = 2.2 mg/ℓ 96 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 | | |
| Solvent naphtha (petroleum), heavy arom. | LC50 = 45 mg/ℓ 96 hr Pimephales | EC50 = 0.95 mg/ℓ 48 hr Daphnia magna | EC50 = 2.5 mg/ℓ 72 hr | | |
| Trimethylolpropane-neopentyl glycol-1,6-hexanediol-phthalic anhydride-adipic acid copolymer | No data | No data | No data | | |
| Silicon dioxide | No data | No data | No data | | |
| Pentanedioic acid, dimethyl ester | LC50 = 13400 mg/ℓ 96 hr | EC50 = 3940 ~ 4670 mg/ℓ 48 hr Daphnia | 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 | | |
| Ethylbenzene | LC50 = 5.1 mg/ℓ 96 hr | LC50 = 1.8 mg/ℓ 48 hr Daphnia magna | EC50 2.6 mg/ℓ 96 hr 기타 | | |
| | | | | | |
| 2. Soil mobility: Not known | | | | | |
| 3. Persistence and degradability | | | | | |

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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 transportaiton 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 Martitie Dangerous Goods Code
U.N Number : 1263
Shipping name : PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquerbase) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Hazard class : 3
Packing group : 3
4. Marine pollutant : 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 _HEALTY AGENCY : Not determined. Water-insoluble
2. Article of Harmful Chemical Substance :
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 data 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.

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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.