MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME IN CHINESE 环氧面漆(主剂)

PRODUCT NAME IN ENGLISH EPICON MARINE HB RED RAL3020, BASE NAME OF MANUFACTURER CHUGOKU MARINE PAINTS (SHANGHAI) LTD.

ADDRESS OF MANUFACTURER 4677, JIASONG ROAD(NORTH), JIADING, SHANGHAI, CHINA

ZIP CODE 201814

FAX NO. 86-21-59501300 EMERGENCY TEL NO. 86-21-59501000

MSDS CODE CM EFFECTIVE DATE OCT 9,2010

FIRE-FIGHTING TEL. NO. 119

2 COMPOSITION/INFORMATION ON INGREDIENTS

MIXTURE

CHEMICAL NAME EPICON MARINE HB RED RAL3020, BASE HAZARDOUS INGREDIENTS CONCENTRATION(%) CAS NO. XYLENE 5 - 10 1330-20-7 BUTYL CELLOSOLVE 5 - 10 111-76-2 **PGME** 5 - 10 107-98-2 **MIBK** 5-10 108-10-1 EPOXY RESIN 20-30 25068-38-6

3 HAZARD IDENTIFICATION

CLASSIFICATION OF HAZARD FLAMMABLE LIQUID TYPE 3

IN VIVO PATHWAY INHALATION、INGESTION、SKIN CONTACT

HUMAN HEALTH EFFECTS MAY CAUSE IRRITATION TO SKIN, EYE AND RESPIRATORY SYSTEM

ENVIRONMENTAL EFFECTS TAKE PRE-CAUTION TO PREVENT CONTAMINATION TO SOIL AND WATER

SPECIAL HAZARDS ACCUMULATION OF VAPOR MAY RESULT IN EXPLOSION

4 FIRST-AID MEASURES

SKIN CONTACT REMOVE CONTAMINATED CLOTHING

WASH WITH SOAP, WATER OR INDUSTRIAL CLEANSER. DO NOT USE SOLVENT.

EYE CONTACT FLUSH THOROUGHLY WITH RUNNING WATER. SEEK MEDICAL ADVICE

INHALATION REMOVE INTO FRESH AIR. LOOSEN COLLAR KEEP AT REST; OXYGEN THERAPY IF NECESSARY;

ARTIFICIAL RESPIRATION WHEN APNEA; SEEK MEDICAL ADVICE.

INGESTION GARGLE, VOMIT, GASTROLAVAGE IMMEDIATELY. SEEK MEDICAL ADVICE.

5 FIRE-FIGHTING MEASURES

PHYSICAL AND CHEMICAL HAZARDS FLAMMABLE LIQUID, ACCUMULATION OF VAPOR MAY RESULT IN EXPLOSION

EASILY GET FIRE WHEN MEET WITH NAKED FLAME OR HIGH TEMPERATURE.

VAPOR IS HEAVIER THAN AIR.

HARMFUL REACTIVE PRODUCTS $\,$ FIRE WITH SMOKE $\,$ CO $\,$ CO $_2$

EXTINGUISHING MEDIA CO2、 FOAMS、 DRY SAND AND CHEMICAL POWDER.

FIRE FIGHTING MEASURES 1.FIRE FIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENTS.

2.REMOVE IMFLAMMABLE MATERIALS NEAR FIRE IMMEDIATELY.

3.NO USING WATER.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS CLEANER SHOULD WEAR PERSONAL PROTECTIVE EQUIPMENT

ENVIRONMENTAL PRECAUTIONS SLUDGE SHALL BE KEPT IN CONTAINER & SEALED

METHODS FOR CLEANING UP SPILLAGE OR LEAKAGE SHOULD BE CLEANED WITH PROPER MATERIAL

AND THE WASTE SHOULD BE DISPOSED IN ACCORDANCE TO ALL LOCAL REGULATIONS

7 HANDLING AND STORAGE

PRECAUTIONS IN 1. KEEP CONTAINER TIGHTLY CLOSED HANDLING & STORAGE 2. KEEP AWAY FROM HEAT & FIRE

3. DON'T MIX WITH FOREIGN MATERIALS

4. KEEP IN COOL, DRY AREA (MAX.37° C & RH80%) 5. AVOID PHYSICAL DAMAGE SUCH AS KNOCKING

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

LIMIT VALUE HAZARDOUS INGREDIENTS ACGIH(TLV)

XYLENE 100 ppm
BUTYL CELLOSOLVE 25 ppm
PGME 100 ppm
MIBK 50 ppm
EPOXY RESIN -

HYGIENE MEASURES THE HARMFUL GAS CONCENTRATION IN THE AIR TESTED BY GAS CHROMATOGRAPHY.

DUST CONTENT IN AIR TESTED ACCORDING TO GB/T5748-1985.

ENGINEERING MEASURES VENTILATION EQUIPMENT :

1. USE EXPLOSION PROFF EXHAUST VENTILATION

2. USE NONSPARK CLOSED TYPE GROUND VENTILATION SYSTEM

PERSONAL PROTECTIVE RESPIRATORY: USE A RESPIRATORY MASK FOR ORGANIC SOLVENT GASSES

EQUIPMENT EYE: WEAR PROTECTIVE GOGGLES

SKIN AND BODY: WORKER SHOULD WEAR OVERALL WORKING SUIT & SAFETY SHOES

HAND: WEAR PROTECTIVE GLOVES

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE LIQUID WITH SOLVENT SMELL

 $\begin{array}{ll} \text{PH VALUE} & \text{NOT AVAILABLE} \\ \text{MELTING POINT($^{\circ}$)} & \text{NOT AVAILABLE} \\ \text{BOILING POINT($^{\circ}$)} & \text{NOT AVAILABLE} \end{array}$

SPECIFIC DENSITY (WATER=1) 1.27-1.37 VAPOUR DENSITY (AIR=1) >1

OCTANOL/WATER PARTITION COEFFICIENT NOT AVAILABLE

FLASH POINT(°C) 24°C (CLOSED CUP)

AUTOIGNITION TEMPERATURE (°C) NOT AVAILABLE

EXPLOSION LIMIT (UEL) (%) NOT AVAILABLE

EXPLOSION LIMIT (LEL) (%) NOT AVAILABLE

SOLUBILITY INSOLUBLE IN WATER

EVAPORATION RATE >1

10 STABILITY AND REACTIVITY

STABILITY STABLE

MATERIALS TO AVOID STRONG OXIDIZED AGENTS, ACIDS, ALKALIS.

CONDITIONS TO AVOID HEAT, SPARK & FLAME

HAZARDOUS POLYMERIZATION IMPOSSIBLE

Hazardous decomposed products $\,$ FIRE WITH SMOKE $\,$ CO $\,$ CO $_2$

11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY HAZARDOUS INGREDIENTS LD50

 XYLENE
 4300 mg/kg

 BUTYL CELLOSOLVE
 530 mg/kg

 PGME
 5660 mg/kg

 MIBK
 2080 mg/kg

 EPOXY RESIN

12 ECOLOGICAL INFORMATION

ECOLOGICAL TOXICITY NOT AVAILABLE BIODEGRADATION NOT AVAILABLE NON-BIODEGRADATION NOT AVAILABLE

13 DISPOSAL CONSIDERATIONS

WASTE TYPE HAZARDOUS WASTE

DISPOSAL METHODS DISPOSING SHOULD FOLLOW ALL LOCAL REGULATIONS

NOTES STORAGE AND DISPOSING SHOULD FOLLOW ALL LOCAL REGULATIONS

14 TRANSPORT INFORMATION

DANGEROUS GOODS NO. 33646 UN NO. 1263

CLASSIFICATION OF HAZARD FLAMMABLE LIQUID

HAZARD LABEL III

PACKING METHODS STEEL DRUM

PRECAUTIONS IN TRANSPORT 1. KEEP CONTAINER TIGHTLY CLOSED

2. KEEP AWAY FROM STRONG SUNSHINE

3. AVOID PHYSICAL DAMAGE SUCH AS KNOCKING

15 REGULATORY INFORMATION

NO. 170 International Regulation (<作业场所安全使用化学品公约>)

Regulations for Safety Using Chemical Product in Work-place (<作业场所安全使用化学品规定>)

Regulations on the Control over Safety of Dangerous Chemicals (<危险化学品管理条例>)

Rules on Management and Control Ships Carrying Dangerous Cargo (<船舶装载危险货物监督管理规则>)

16 OTHER INFORMATION

REFERENCE LIST

- RAW MATERIAL DATA BASE (JAPANESE PAINT MANUFACTURERS ASSOCIATION)
- SOLVENT POCKET BOOK (YUUKIE KAGAKU KYOKAI)
- INTERNATIONAL CHEMICAL SUBSTANCE SAFETY CARD (KAGAKU KOGYO NIPPON)
- REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCE (NIOSH)
- ACGIH: 1990-1991 THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS.
- HAND BOOK OF HAZARDS AND HARM OF CHEMICAL SUBSTANCE (CHUOH RODOHSAIGAI BOHSHI KYOKAI)
- DATA BOOK OF HAZARDOUS SUBSTANCE (MARUZEN)

DATE PREPARED 2008-10-9

DIVISION IN CHARGE CHUGOKU MARINE PAINTS(SHANGHAI)LTD./TECH. DIV.

SECTION TO REVIEW CHUGOKU MARINE PAINTS(SHANGHAI)LTD.

COMMENTS OF REVISION NO INFORMATION

OTHER INFORMATION

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