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Updated : October 28, 2010

MSDS No. : MS-00163201-03

SECTION 1 IDENTIFICATION

MANUFACTURER TAIYO INK MFG. CO., LTD. TEL 81-493-61-2832
 900 Hirasawa, Ranzan-machi, Hiki-gun FAX 81-493-61-2833
 Saitama, 355-0215 JAPAN

DISTRIBUTOR

EMERGENCY CONTACT TEL 81-493-61-2832 FAX 81-493-61-2833

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS No.	CONTENTS (%)	OSHA (PEL)	ACGIH (TLV)
Bisphenol A-(epichlorhydrin);Epoxy resin(MW \leq 700)	25068-38-6	< 43%	N. A.	N. A.
Barium Sulfate	7727-43-7	< 26%	dust 15mg/m3	10mg/m3
Talc containing no asbestiform fibers	14807-96-6	< 7%	20mppcf	2mg/m3(R)
Silica, amorphous	Trade secret	< 1%	N. A.	dustTLV10mg/m3
Carbon black	1333-86-4	< 2%	3.5mg/m3	3.5mg/m3

SECTION 3 HAZARDS IDENTIFICATION

INHALATION : Highly concentrated vapor irritates nose, throat and lungs.
 May cause headache and dizziness.

EYE CONTACT : Moderately irritation

SKIN CONTACT : Moderately irritation

INGESTION : Harmful, if swallowed.

SECTION 4 FIRST AID MEASURES

SKIN CONTACT : Wash with plenty of running water using a mild soap. Do not use organic solvents.

EYE CONTACT : Rinse immediately with clean water for at least 15 minutes.
 If irritation persists, seek medical attention.

INHALATION : Immediately carry the victim to a place where fresh air is available.
 If irritation persists, treat with oxygen and seek medical attention.

INGESTION : Obtain medical advice immediately. It is not recommended that vomiting be induced except on medical advice.

SECTION 5

FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA	: Carbon dioxide, foam, powder.
UNSUITABLE EXTINGUISHING MEDIA	: Water spray and water jet.
EXPOSURE HAZARDS	: Burning may release oxides of carbon, nitrogen, sulphur and other toxic gases or vapors. Do not release chemically contaminated water into drains or surface waters. Dispose of contaminated waters and soil according to local regulations.
PROTECTIVE EQUIPMENT FOR FIREFIGHTERS MEASURES	: Use full protective clothing and self-contained breathing apparatus. : Promptly move transferable containers to another safety area. Check the speed and spread of fire. Extinguish the fire with suitable extinguisher from the windward side.

SECTION 6

ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTION	: Avoid ignition sources. Avoid contact with skin, eyes and clothing. Avoid inhaling vapor.
ENVIRONMENTAL PRECAUTIONS METHODS FOR CLEANING	: Prevent contamination of soil, drains and surface waters : Scoop up or absorb into combustible material, wipe out a stain in use organic solvents. Dispose in accordance with local regulations.

SECTION 7

HANDLING AND STORAGE

HANDLING	: Handle with care. Avoid ignition sources. Ensure good ventilation and local exhaust. Do not smoke at the workplace.
STORAGE	: Store in the original sealed container at less than 20°C. Avoid direct exposure to UV and sunlights.

SECTION 8

EXPOSURE CONTROLS/PERSONAL PROTECTION

People who know they are chemically sensitive, should avoid contact with this product.	
TECHNICAL PROTECTIVE MEASURES	: No special safety measures required.
EXPOSURE CONTROL LIMITS	: (See PEL and TLV values shown in section 2)
RESPIRATORY PROTECTION	: Wear suitable mask to avoid inhalation of vapor.
HAND PROTECTION	: Wear chemical resistant gloves.
EYE PROTECTION	: Wear safety glasses.
SKIN PROTECTION	: Wear suitable protective working cloths.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT	: *191°C (760mmHg)	COLOR	: Black
FLASH POINT	: 92.0°C (Seta C.C.)	FORM	: Paste
VAPOR PRESSURE	: * 2.00mmHg (38°C)	VAPOR DENSITY	: * 6.12 (Air=1)
SOLUBILITY IN WATER	: * < 4.2wt%	ODOR	: Mild odor
		SPECIFIC GRAVITY	: 1.3 - 1.5

*Data of the organic solvents or monomers contained in this product is quoted.

SECTION 10

STABILITY AND REACTIVITY

STABILITY : Stable
CONDITIONS TO AVOID : Heat and sunlight.
MATERIALS TO AVOID : Strong acids, strong bases, peroxids and strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS : Burning may release oxides of carbon, nitrogen, sulphur and other toxic gases or vapors.

SECTION 11

TOXICOLOGICAL INFORMATION

PRIMARY ROUTE(S) OF ENTRY

DERMAL INHALATION INGESTION

TOXICITY STUDIES : Toxicity studies have not been carried out on this product. Toxicity information available for the ingredients listed in section 2 is given below.

HEALTH HAZARDS

ACUTE INGESTION TOXICITY : N.E.
ACUTE SKIN IRRITATION : Slightly irritant
MUTAGENICITY : Bisphenol A-(epichlorhydrin);Epoxy resin(MW \leq 700) is suspected to have a mutagenicity.

CARCINOGENICITY

NTP IARC OSHA NOT LISTED

Carbon black mentioned at Section 2 is classified to a carcinogen, because of the specific state furnished in a powder form and which causes lung cancer, due to the direct inhalation. This case, it is mixed together with other substances and which is furnished in a liquid preparation, having no capability of allowing any direct inhalation of Carbon black itself. This material furnished in a liquid preparation has no potential to cause any lung cancers.

SYMPTOMS OF OVER EXPOSURE

INHALATION : Slight irritation to respiratory tract. Highly concentrated vapor may cause headaches, dizziness, and nausea.
EYES : Moderately irritation
SKIN : Moderately irritation
INGESTION : Expected to have a low order of toxicity.

SECTION 12

ECOLOGICAL INFORMATION

ACUTE FISH TOXICITY : Ecological data are not available
BIODEGRADABILITY : U. K.

SECTION 13

DISPOSAL CONSIDERATIONS

Incineration or landfill in accordance with local regulations.

SECTION 14

TRANSPORT INFORMATION

IMDG-CODE : Free
IATA : Free
UN : Free
FLASH POINT : 92.0°C (Seta C.C.)

SECTION 15REGULATORY INFORMATION

EEC LABELING : Xi=Irritant

N = Dangerous for the environment

RISK PHRASES : R36/38 - Irritating to eyes and skin.
R43 - May cause sensitization by skin contact.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SAFETY PHRASES : S37/39 - Wear suitable gloves and eye/face protection.
S28 - After contact with skin, wash immediately with plenty of water and soap.
S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.

TSCA : on TSCA on LVE NOT LISTEDEINECS : on EINECS on ELINCS NOT LISTED

SECTION 16

OTHER INFORMATION

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties. It may not be valid for this material, if used in combination with any other materials.

Data provided in Section 11,12 and 15 are quoted from raw materials MSDSs.

Please kindly contact to our local sales office/distributor in case if you plan to export this product before use.

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Updated : October 28, 2010

MSDS No. : MS-00151711-06

SECTION 1 IDENTIFICATION

MANUFACTURER TAIYO INK MFG. CO., (KOREA) LTD. TEL82-31-491-9250
 1058-8. Singil-dong, Danwon-gu, FAX82-31-491-7671
 Ansan-city, Gyeonggi-do, 425-839 KOREA

DISTRIBUTOR TAIYO INK MFG. CO., LTD. TEL 81-493-61-2832
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SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS No.	CONTENTS(%)	OSHA (PEL)	ACGIH (TLV)
Bisphenol A-(epichlorhydrin);Epoxy resin(MW ≤ 700)	25068-38-6	< 20%	N. A.	N. A.
Diethylene Glycol Monobutyl Ether	112-34-5	< 25%	N. A.	N. A.
Silica, amorphous	Trade secret	< 25%	N. A.	dustTLV10mg/m3

SECTION 3 HAZARDS IDENTIFICATION

INHALATION : Highly concentrated vapor irritates nose, throat and lungs.
 May cause headache and dizziness.

EYE CONTACT : Moderately irritation

SKIN CONTACT : Moderately irritation

INGESTION : Harmful, if swallowed.

SECTION 4 FIRST AID MEASURES

SKIN CONTACT : Wash with plenty of running water using a mild soap. Do not use organic solvents.

EYE CONTACT : Rinse immediately with clean water for at least 15 minutes.
 If irritation persists, seek medical attention.

INHALATION : Immediately carry the victim to a place where fresh air is available.
 If irritation persists, treat with oxygen and seek medical attention.

INGESTION : Obtain medical advice immediately. It is not recommended that vomiting be induced except on medical advice.

SECTION 5

FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA	: Carbon dioxide, foam, powder.
UNSUITABLE EXTINGUISHING MEDIA	: Water spray and water jet.
EXPOSURE HAZARDS	: Burning may release oxides of carbon, nitrogen, sulphur and other toxic gases or vapors. Do not release chemically contaminated water into drains or surface waters. Dispose of contaminated waters and soil according to local regulations.
PROTECTIVE EQUIPMENT FOR FIREFIGHTERS MEASURES	: Use full protective clothing and self-contained breathing apparatus. : Promptly move transferable containers to another safety area. Check the speed and spread of fire. Extinguish the fire with suitable extinguisher from the windward side.

SECTION 6

ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTION	: Avoid ignition sources. Avoid contact with skin, eyes and clothing. Avoid inhaling vapor.
ENVIRONMENTAL PRECAUTIONS METHODS FOR CLEANING	: Prevent contamination of soil, drains and surface waters : Scoop up or absorb into combustible material, wipe out a stain in use organic solvents. Dispose in accordance with local regulations.

SECTION 7

HANDLING AND STORAGE

HANDLING	: Handle with care. Avoid ignition sources. Ensure good ventilation and local exhaust. Do not smoke at the workplace.
STORAGE	: Store in the original sealed container at less than 25°C. Avoid direct exposure to UV and sunlights.

SECTION 8

EXPOSURE CONTROLS/PERSONAL PROTECTION

People who know they are chemically sensitive, should avoid contact with this product.	
TECHNICAL PROTECTIVE MEASURES	: No special safety measures required.
EXPOSURE CONTROL LIMITS	: (See PEL and TLV values shown in section 2)
RESPIRATORY PROTECTION	: Wear suitable mask to avoid inhalation of vapor.
HAND PROTECTION	: Wear chemical resistant gloves.
EYE PROTECTION	: Wear safety glasses.
SKIN PROTECTION	: Wear suitable protective working cloths.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT	: *231°C (760mmHg)	COLOR	: Grayish Brown
FLASH POINT	: 77.0°C (Seta C.C.)	FORM	: Paste
VAPOR PRESSURE	: * 0.02mmHg(20°C)	VAPOR DENSITY	: * 5.60 (Air=1)
SOLUBILITY IN WATER	: * < 25.0wt%	ODOR	: Mild odor
		SPECIFIC GRAVITY	: 1.0 - 1.2

*Data of the organic solvents or monomers contained in this product is quoted.

SECTION 10

STABILITY AND REACTIVITY

STABILITY : Stable
CONDITIONS TO AVOID : Heat and sunlight.
MATERIALS TO AVOID : Strong acids, strong bases, peroxids and strong oxidizing agents.
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CARCINOGENICITY

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SYMPTOMS OF OVER EXPOSURE

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EYES : Moderately irritation
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INGESTION : Expected to have a low order of toxicity.

SECTION 12

ECOLOGICAL INFORMATION

ACUTE FISH TOXICITY : Ecological data are not available
BIODEGRADABILITY : U. K.

SECTION 13

DISPOSAL CONSIDERATIONS

Incineration or landfill in accordance with local regulations.

SECTION 14

TRANSPORT INFORMATION

IMDG-CODE : Free
IATA : Free
UN : Free
FLASH POINT : 77.0°C (Seta C. C.)

SECTION 15REGULATORY INFORMATION

EEC LABELING : Xi=Irritant

RISK PHRASES : R36/38 - Irritating to eyes and skin.
R43 - May cause sensitization by skin contact.
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SAFETY PHRASES : S24 - Avoid contact with skin.
S37/39 - Wear suitable gloves and eye/face protection.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 - After contact with skin, wash immediately with plenty of water and soap.
S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.

TSCA : on TSCA on LVE NOT LISTED
EINECS : on EINECS on ELINCS NOT LISTED

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