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MSDS No. : MS-00252401-00

SECTION 1 IDENTIFICATION

TAIYO INK MFG. CO., LTD. MANUFACTURER 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 ACGIH (PFI) (TLV) Ν.Α. dustTLV10mg/m3 Silica, amorphous Trade secret < 2% Talc containing no asbestiform fibers 14807-96-6 < 3% 20mppcf 2 mg/m3 (R)< 38% Titanium dioxide 13463-67-7 dust $15 \,\mathrm{mg/m3}$ $10 \,\mathrm{mg/m3}$ 21645-51-2 Aluminium hydroxide < 5% N.A. dustTLV10mg/m3 Dipropylene glycol monomethyl ether 34590-94-8 < 23% 100ppm100ppm

SECTION 3 HAZARDS IDENTIFICATION

INHALATION : Highly concentrated vapor irritates nose, throat and lungs.

May cause headache and dizziness.

EYE CONTACT : Slight irritation SKIN CONTACT : Slight 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 EXITINGUISHING 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 : Use full protective clothing and self-contained

FOR FIREFIGHTERS breathing apparatus.

MEASURES : Promptly move transferable containers to another

safety area. Check the speed and spread of fire. Extinguish the fire with suitable SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTION : Avoid ignition sources. Avoid contact with skin, eyes

and clothing. Avoid inhalating vapor.

ENVIRONMENTAL PRECAUTIONS : Prevent contamination of soil, drains and surface waters METHODS FOR CLEANING : Scoop up or absorb into combustible material, wipe out

: 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

 $20\,^{\circ}\mathrm{C}$. 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 : *190°C (760mmHg) COLOR : White FLASH POINT : 86.0°C (Seta C.C.) FORM : Paste

VAPOR PRESSURE : * 0.28mmHg(20°C) VAPOR DENSITY : * 7.15 (Air=1)

SOLUBILITY IN WATER : *< 29.6wt% ODOR : Mild odor

SPECIFIC GRAVITY: N.E.

*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, peroxides 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 : NONE

CARCINOGENICITY

□NTP ■ IARC □OSHA □NOT LISTED

Titanium dioxide (IARC 2B)

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 Titanium dioxide 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 : Slight irritation SKIN : Slight 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 : 86.0°C (Seta C.C.)

SECTION 15 REGULATORY INFORMATION

EEC LABELING : Xn=Harmful

The identification of the "Harmful" mark is not legally required,

but we have indicated it voluntarily for your safety use.

RISK PHRASES : N. A SAFETY PHRASES : N. A

TSCA : \blacksquare on TSCA \square on LVE \square NOT LISTED EINECS : \blacksquare on EINECS \square on ELINCS \square 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.

HD - 50 LEW 5 1

Updated : March 12, 2014

MSDS No. : MS-00252501-02

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SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

> INGREDIENTS CAS No. CONTENTS (%) OSHA ACGIH

(PEL) (TLV)

N.A.

Bisphenol A-(epichlorhydrin); Epoxy resin (MW ≤ 700)

< 77% 25068-38-6 N.A.

TGIC (Muta. cat. 2; R46) 2451-62-9 < 24% N.A. $0.05 \,\mathrm{mg/m3}$

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 EXITINGUISHING 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 : Use full protective clothing and self-contained

FOR FIREFIGHTERS breathing apparatus.

MEASURES : 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

METHODS FOR CLEANING

: Avoid ignition sources. Avoid contact with skin, eyes

and clothing. Avoid inhalating vapor.

ENVIRONMENTAL PRECAUTIONS

: 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

 $20\,^{\circ}\!\text{C}$. 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 : N.E. COLOR : White : 260.0°C (Cleveland O.C.)FORM FLASH POINT : Paste VAPOR PRESSURE : N.E. VAPOR DENSITY : N.E. SOLUBILITY IN WATER : N.E. ODOR : Mild odor

SPECIFIC GRAVITY: N.E.

*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 : TGIC (Muta.cat.2;R46)

Oral-rats LD50=715mg/kg

ACUTE SKIN IRRITATION : Slightly irritant

MUTAGENICITY : Bisphenol A-(epichlorhydrin); Epoxy resin(MW≤700)

TGIC (Muta. cat. 2; R46)

are suspected to have a mutagenicity

CARCINOGENICITY

□NTP □IARC □OSHA ■NOT LISTED

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

FLASH POINT : 260.0°C (Cleveland O.C.)

SECTION 15 REGULATORY INFORMATION EEC LABELING : $T = T \circ x i c$ Xi=Irritant N = Dangerous for the environment RISK PHRASES : R48/22-Harmful:danger of serious damage to health by prolonged exposure if swallowed. R46 - May cause heritable genetic damage. R41-Risk of serious damage to eyes. R20/22-Harmful by inhalation and if swallowed. 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 : S53 - Avoid exposure - obtain special instructions before use. $\mathrm{S37/39}$ - Wear suitable gloves and eye/face protection. S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). 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. □on LVE TSCA : ■ on TSCA □NOT LISTED □on ELINCS EINECS : ■on EINECS □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.

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