tok TOKYO OHKA KOGYO CO., LTD.

MATERIAL SAFETY DATA SHEET ST-24-C 1/7

STRIPPER 106

1. PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME: STRIPPER 106
CREATION DATE: March 26, 1999
REVISION DATE: October 11, 2000
MSDS PREPARED BY: Manufacturing Technology Division, Safety Control Section, TOK

JAPAN
SUPPLIER: TOKYO OHKA KOGYO CO., LTD.
SECTION: Manufacturing Technology Division, Safety Control Section
ADDRESS: 150 Nakamaruko, Nakahara-ku, Kawasaki City, Kanagawa Prefecture 211-0012, JAPAN
TELEPHONE NUMBER: 044-435-3000
FAX NUMBER: 044-435-3020
EMERGENCY RESPONSE: 044-435-3001
044-435-3002

U.S.A.
SUPPLIER: OHKA AMERICA, INC.
ADDRESS: 190 Topaz Street, Milpitas, California 95035, U.S.A.
TELEPHONE NUMBER: 408-956-9901
FAX NUMBER: 408-956-9995
EMERGENCY RESPONSE: 503-693-7711
800-424-9300 (CHEMTREC)

EUROPE
SUPPLIER: OHKA EUROPE LTD.
ADDRESS: Nettlehill Road, Houston Industrial Estate, LIVINGSTON EH54 5DL, U.K.
TELEPHONE NUMBER: 1506-4-38755
FAX NUMBER: 1506-4-38541
EMERGENCY RESPONSE: 1506-4-38755

2. COMPOSITION & INFORMATION ON INGREDIENTS

SIMPLE/MIXTURE: Mixture
CHEMICAL NAME (GENERIC NAME): None
SYNONYM (S): None
INGREDIENT AND COMPOSITION:

INGREDIENTS	wt%	CHEMICAL FORMULA	CAS NO.	EINECS NO.
Monoethanol amine	70	$HOCH_2CH_2NH_2$	141-43-5	205-483-3
Dimethylsulfoxide	30	$(CH_3)_2SO$	67-68-5	200-664-3

UN CLASS: 8 (Corrosive Substances)
UN NUMBER: 1760

3. HAZARDS IDENTIFICATION

Skin contact severely corrodes skin.
Eye contact severely corrodes conjunctiva or cornea. It is more likely that it also causes damage on, or loss of, eyesight.
Inhalation irritates trachea, lung, throat, or nose.

4. FIRST-AID MEASURES

SKIN CONTACT:
Flush the affected part with running water.
Rinse off the skin thoroughly and quickly as possible.
Delay of few seconds may increase injury.
If irritation continues, immediately take the patient to a physician for examination and treatment.
EYE CONTACT:
Immediately rinse the eyes with running water to wash off the chemical completely.
Immediately take the patient to a physician for examination and treatment.
INHALATION:
Move the patient at once to fresh air.
When breathing seems difficult, treat the patient with artificial respiration.
Immediately take the patient to a physician for examination and treatment.
INGESTION:
Rinse the mouth with water.
Immediately take the patient to a physician for examination and treatment.

5. FIRE FIGHTING MEASURES

SPECIFIC HAZARD REGARDING FIRE FIGHTING MEASURES:
Shut off fuel as much as possible.
Dry chemical or carbon dioxide should be used for small fires.
Evacuate unnecessary personnel to safe area.
Fire fighters should wear proper protective clothing.
Foam should be effective for large fires.
When sprayed, water should be effective for cooling and protection of the fire fighters. However, use of water may expand the fire.
EXTINGUISHING MEASURES:
Dry sand, foam, carbon dioxide, or dry chemical powder extinguisher should be used.

6. ACCIDENTAL RELEASE DEALING MEASURES

Evacuate the leeward personnel.
Ventilate the area.
Quickly shut off all ignition sources.
Equip extinguishers in case of ignition.

Wear proper protective clothings.
When the leak is small, wipe it with cloths. Leave the cloth in the draft, and burn it off after solvent has evaporated.
When the leak is large, try to stop the flow with cloths, and collect the spilt solution in an empty container as much as possible.
Prevent spilt solution from entering sewers, watercourses, rivers, or fields.

7. HANDLING & STORAGE

HANDLING:
Be careful in handling the container, and protect it from damages.
Wear proper protective clothings.
Use only in the well-ventilated area.
Seal the container after handling.
Avoid contact with oxidizing agents or reductants.
Shut off all sources of ignition.
The electric facility should be explosion proof.
Ground.
When moving the solution through pipings, ground the metallic part of the apparatuses, pipings and containers to prevent generation of electrostatic charges.
Pay attention to ventilation. This vapor is heavier than air, and easily stays at low position.
Do not use direct heater or immersion heater for heating, and watch out when fire is used.
Solution should not remain in piping when it is not used.
Water facility should be installed at every place where the solution is used. It should facilitate measures in case of adhesion or contact with eyes.
Do not bring contaminated protective tools, such as gloves, to the lounge.
Be careful of personal health after handling.

STORAGE:
Keep the container sealed, and store in a dark place. (See the original label on the container for our storage recommendation.)
Keep away all sources of ignition.
Do not overheat.
Do not let it evaporate without a reason.
Store in well-ventilated area.
Do not store or set together with acidic chemicals. This contains basic chemical.

OTHERS:
Follow all national and local regulations.

8. EXPOSURE PREVENTIVES

TOLERANCE LEVEL:

INGREDIENTS	ACGIH TLV	OSHA PEL
Monoethanol amine	TWA 3 ppm (7.5 mg/m^3)	TWA 3 ppm (6 mg/m^3)
Dimethylsulfoxide	Not Applicable	Not Applicable

FACILITY CONTROL: When handling, try to use closed apparatuses, equipment or partial ventilator.

PERSONAL PROTECTIVE CLOTHINGS:

RESPIRATORY PROTECTOR: Chemical cartridge respirator with cartridge to protect against the organic vapor.

Airline respirator.

EYE PROTECTOR: Chemical goggles.

HAND, SKIN AND BODY PROTECTOR: Gloves and clothing to cover the whole body.

9. PHYSICAL & CHEMICAL PROPERTY

APPEARANCE: Colorless or light yellow liquid

DENSITY: 1.04 (d25@4)

BOILING POINT: Not Available

MELTING POINT: -2°C

RELATIVE VAPOR DENSITY: Not Available

SOLUBILITY IN WATER: Soluble

10. PHYSICAL HAZARD

MATERIAL	FLASH POINT	IGNITION POINT	EXPLOSION LIMIT
Product concerned	91°C	Not Available	Not Available
Monoethanol amine	85°C	410°C	5.5~17.0 vol%
Dimethylsulfoxide	95°C	304°C	3.0~42.0 vol%

STABILITY: Stable.

REACTIVITY: Emit carbon monoxide when burned with insufficient oxygen.

11. TOXICOLOGICAL INFORMATION (Only data for each component is available.)

Monoethanol amine

ACUTE TOXICITY:

Oral LD50 (rat): 1720 mg/kg

Oral LD50 (mouse): 700 mg/kg

Inhalation LC (mouse): >2420 mg/m^3/2 hours

Intraperitoneal LD50 (rat): 67 mg/kg

Intraperitoneal LD50 (mouse): 50 mg/kg

Skin LD50 (rabbit): 1 ml/kg

Intravenous LD50 (rat): 225 mg/kg

SUBCHRONIC TOXICITY AND CHRONIC TOXICITY:

Maximum daily no effect level in an oral 90 day study in rats was 0.32 g/kg. In inhalation studies, dog, rats and guinea pigs survived 12-25 ppm for 90 days; some mortality occurred on 24-30 days in dogs exposed to 100 ppm, and in rodents exposed to 66-75 ppm. Skin irritation and lethargy occurred at 5-12 ppm.

MUTAGENIC EFFECT:

Salmonella typhimurium TA98, TA100, TA1535, TA1537 with and without metabolic activation negative.

CARCINOGENIC EFFECT:

No carcinogenic effects were noted in OSHA, EPA, EU, NTP, IARC, and ACGIH.

TERATOGENIC EFFECT:

Monoethanolamine was given by gavage at levels of 0, 500, 300, or 50 mg/kg/day (24%, 14.4%, or 2.4% of the LD50 value). Monoethanolamine caused dose-dependent increases in intrauterine deaths, malformations, and intrauterine growth retardation. Embryolethality caused by 500 mg/kg of monoethanolamine was not random.

Dimethylsulfoxide

ACUTE TOXICITY:

Oral LD50 (rat): 14500 mg/kg
Oral LD50 (mouse): 7920 mg/kg
Intraperitoneal LD50 (rat): 8200 mg/kg
Intraperitoneal LD50 (mouse): 2500 mg/kg
Intravenous LD50 (rat): 5360 mg/kg
Intravenous LD50 (mouse): 3100 mg/kg

SUBCHRONIC TOXICITY AND CHRONIC TOXICITY:

Gavage rat (45 day) 5000 mg/kg/day caused a slight loss in body weight, liver cell necrosis and inflammation with irritation of the portal spaces.

MUTAGENIC EFFECT:

Salmonella typhimurium TA97, TA98, TA100, TA1535, TA1537, TA1538 with and without metabolic activation negative.

CARCINOGENIC EFFECT:

No carcinogenic effects were noted in OSHA, EPA, EU, NTP, IARC, and ACGIH.

TERATOGENIC EFFECT:

Intraperitoneal rat 10 mg/kg/day on days 6-12 of gestation caused development effects to the central nervous system and musculoskeletal system, including anencephalia, malformed limbs and celosomia.

Intraperitoneal mouse, lowest toxic dose 5500 mg/kg on day 10 of gestation caused developmental effects to the musculo-skeletal system.

12. ECOLOGICAL INFORMATION (Only data for each component is available.)

Monoethanol amine

BIODEGRADABILITY: Biodegradable.

FISH TOXICITY:

goldfish LC50 (24 hours): 190 mg/l (pH 10.1)
goldfish LC50 (96 hours): 170 mg/l

OTHER INFORMATION ON ECOTOXICITY

Octanol/Water Partition Coefficient: -1.31

BOD: BOD_5 34%, BOD_{20} 40% (initial concentration 100 ppm, sewage inoculum)

COD: No relevant information found.

Dimethylsulfoxide

BIODEGRADABILITY: Lower or Not Biodegradable.

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FISH TOXICITY:
Exposure of coho salmon to 1% v/v solution for 100 day caused no adverse effects.
OTHER INFORMATION ON ECOTOXICITY
Octanol/Water Partition Coefficient: -2.03
BOD: No relevant information found.
COD: No relevant information found.

13. DISPOSAL CONSIDERATION

When dispose, pay attention to what is written in **7.HANDLING & STORAGE**, and follow all regulations.
It should be burned off as a rule.
Follow all national and local regulations.

14. TRANSPORT INFORMATION

UN CLASS: 8 (Corrosive Substances)
UN NUMBER: 1760
HAZCHEM CODE: Not Applicable
ADR/RID (GGVS/GGVE): 66°(c)
IATA/ICAO: Class 8 packing group III

Keep away from incompatibilities and all sources of ignition.
Follow all national and local regulations.

15. REGULATION INFORMATION

NATIONAL REGULATION
UN CLASS: 8 (Corrosive Substances)
UN NUMBER: 1760
US TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS
Each individual component of the subject product is listed on TSCA Inventory of Existing Chemical Substances.
LABELLING IN ACCORDANCE WITH EC GUIDELINES
HAZARD SYMBOL: Xn

HAZARD CLASSIFICATION: Xn; R20
Xi; R36/37/38
REGULATION IN ACCORDANCE WITH EC GUIDELINES
R-REGULATIONS: R20 - Harmful by inhalation.
R36/37/38 - Irritating to eyes, respiratory system and skin.
S-REGULATIONS: Not Applicable

Follow all your national regulations.

16. OTHER INFORMATION

Reference:

1. HSDB
2. RTECS
3. The Dictionary of Substance and Their Effects (The Royal Society of Chemistry)
4. Material Safety Data Sheet (of the raw material manufacturer)

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.