

OMR DEVELOPER SG**1. PRODUCT & COMPANY IDENTIFICATION**PRODUCT NAME: **OMR DEVELOPER SG**

CREATION DATE: January 24, 2002

REVISION DATE: May 23, 2003

MSDS PREPARED BY: Manufacturing Technology Division, Safety Control Section, TOK

JAPAN

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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.
n-Heptane	94.9	CH ₃ (CH ₂) ₅ CH ₃	142-82-5	205-563-8
Xylene	4.1	C ₆ H ₄ (CH ₃) ₂	1330-20-7	215-535-7
Ethylbenzene	1.0	C ₆ H ₅ C ₂ H ₅	100-41-4	202-849-4

3. HAZARDS IDENTIFICATION**NFPA RATINGS:**

HEALTH=2, FIRE=4, REACTIVITY=0 (SCALE 0-4)

POTENTIAL HEALTH EFFECTS:

Skin contact causes irritation. Prolonged skin contact may cause cracking or other damages on skin (such as dermatitis).

Eye contact causes irritation.

Inhalation causes irritation of the nose or the respiratory tract, and may cause headache, nausea, vomit, dizziness, or unconsciousness. It may also decrease the central nervous system function.

4. FIRST-AID MEASURES

SKIN CONTACT:

Wash the affected part with plenty of running water and mild soap.

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.

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 clothings.

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.

Solution should not remain in pipings 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.)

Separate from combustibles.

Do not store or set together with acid, for this is basic.

It might freeze when temperature decreases.

OTHERS:

Follow all national and local regulations.

8. EXPOSURE PREVENTIVES

TOLERANCE LEVEL:

INGREDIENTS	ACGIH TLV	OSHA PEL
n-Heptane	TWA 400 ppm (1640mg/m ³) STEL 500 ppm (2050 mg/m ³)	TWA 500 ppm (2000 mg/m ³)
Xylene	TWA 100 ppm (434 mg/m ³) STEL 150 ppm (651 mg/m ³)	TWA 100 ppm (435 mg/m ³)
Ethylbenzene	TWA 100 ppm (434 mg/m ³) STEL 125 ppm (543 mg/m ³)	TWA 100 ppm (435 mg/m ³)

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 liquid

SPECIFIC GRAVITY: 0.69 (d25@4)

BOILING POINT: Not Available

SOLIDIFYING POINT: <-10 °C

RELATIVE VAPOR DENSITY: Not Available

SOLUBILITY IN WATER: Insoluble

10. PHYSICAL HAZARD

MATERIAL	FLASH POINT	IGNITION POINT	EXPLOSION LIMIT
Product concerned	-4 °C	Not Available	Not Available
n-Heptane	-4 °C	230 °C	1.2-6.7 vol%
Xylene	25 °C	425 °C	1.0-9.0 vol%
Ethylbenzene	18 °C	432 °C	1.0-6.7 vol%

STABILITY: Stable.

REACTIVITY: Emit carbon monoxide when burned with insufficient oxygen.

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

n-Heptane

ACUTE TOXICITY:

Inhalation LC50 (rat): 103000 mg/m³/4 hours

Inhalation LCLo (mouse): 59000 mg/m³/41 minutes

Intravenous LD50 (mouse): 222 mg/kg

SUBCHRONIC TOXICITY AND CHRONIC TOXICITY:

Inhalation rat (26 weeks) 400-3000ppm 6 hours/day for 26 weeks caused no neurological disturbances or organ toxicity. Except for increased serum alkaline phosphatase activity in female rats at high dose, blood chemistry showed no haematological, renal or liver disorders.

MUTAGENIC EFFECT:

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

CARCINOGENIC EFFECT:

EPA - D; Not classifiable as to human carcinogenicity.

TERATOGENIC EFFECT:

No relevant information found.

Xylene

ACUTE TOXICITY:

Oral LD50 (rat): 4300 mg/kg

Oral LDLo (mouse): 6000 mg/kg

Inhalation LC50 (rat): 5000 ppm/4 hours

Inhalation LCLo (guinea pig): 450 ppm

Intraperitoneal LD50 (rat): 2459 mg/kg

Intraperitoneal LD50 (mouse): 1548 mg/kg

Skin LD50 (rabbit): >1700 mg/kg

SUBCHRONIC TOXICITY AND CHRONIC TOXICITY:

In 13 wk studies, groups of 10 rats of each sex received 0, 62.5, 125, 250, 500, or 1000 mg/kg, and groups of 10 mice of each sex received 0, 125, 250, 500, 1000, or 2000 mg/kg. No deaths or clinical signs of toxicity were recorded in rats. However, high dose male rats gained 15% less and females gained 8% less weight than did the vehicle controls. Two female mice died at the 2000 mg/kg level. Lethargy, short and shallow breathing, unsteadiness, tremors, and paresis were observed for both sexes in the 2000 mg/kg group within 5-10 min after dosing and lasted for 15-60 min.

MUTAGENIC EFFECT:

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

Escherichia coli WP2s (lambda) microscreen assay with and without metabolic activation negative.

CARCINOGENIC EFFECT:

IARC - Group 3; Unclassifiable as to carcinogenicity in humans.

EPA - D; Not classifiable as to human carcinogenicity.

ACGIH - A4; Not classifiable as a human carcinogen.

TERATOGENIC EFFECT:

Inhalation rat, lowest toxic dose 50 mg/m³ or 500 mg/m³ 6 hours/day on days 1-21 of gestation resulted in embryotoxic and teratogenic disturbances. The brain, liver, lung and heart were affected. Post-implantation mortality was increased by 94% and 168% in the 50- and 500- mg groups, respectively, and the incidence of foetal skeletal abnormalities was increased by 62% and 177%, respectively.

Gavage mice lowest toxic dose 21 mg/kg/day on days 6-15 of gestation increased the number of resorptions and malformations (cleft palate; wavy ribs) in treated animals.

Ethylbenzene**ACUTE TOXICITY:**

Oral LD50 (rat): 5460 mg/kg

Inhalation LCLo (rat): 4000 ppm/4 hours

Intraperitoneal LD50 (mouse): 2270 mg/kg

Skin LD50 (rabbit): 17800 mg/kg

SUBCHRONIC TOXICITY AND CHRONIC TOXICITY:

Repeated or prolonged contact with skin may cause dermatitis.

MUTAGENIC EFFECT:

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

In vitro human lymphocytes, sister chromatid exchanges weakly positive.

In vitro Chinese hamster ovary cells, chromosomal aberrations negative, sister chromatid exchanges positive.

CARCINOGENIC EFFECT:

IARC - Group 2B; Possibly carcinogenic to humans.

EPA - D; Not classifiable as to human carcinogenicity.

TERATOGENIC EFFECT:

Inhalation rat 600, 1200 or 2400 mg/m³ for 24 hr/day on days 7-15 of gestation. The highest dose retarded skeletal development and foetal weight gain, and increased the incidence of extra ribs.

12. ECOLOGICAL INFORMATION (Only data for each component is available.)**n-Heptane**

BIODEGRADABILITY: No relevant information found.

FISH TOXICITY:

LC50 (24 hours, goldfish): 4 mg/l

LC50 (24 hours, mosquito fish): 4900 mg/l

OTHER INFORMATION ON ECOTOXICITY

Octanol/Water Partition Coefficient: 4.66

BOD: BOD₅ 1.92

COD: 0.06

Xylene

BIODEGRADABILITY: Biodegradable.

FISH TOXICITY:

LC50 (96 hours, fathead minnow): 16 mg/l.

OTHER INFORMATION ON ECOTOXICITY

Octanol/Water Partition Coefficient: 3.12-3.20

BOD: No relevant information found.

COD: No relevant information found.

Ethylbenzene

BIODEGRADABILITY: Biodegradable.

FISH TOXICITY:

LC50 (96 hours, bluegill sunfish, goldfish, guppy, fathead minnow): 12-96 mg/l

Octanol/Water Partition Coefficient: 3.15

BOD: No relevant information found.

COD: No relevant information found.

13. DISPOSAL CONSIDERATION

All excess material must be collected and transferred to a professional waste disposal company for incineration.

Carefully review information in - **7.HANDLING & STORAGE.**

Comply with all national and local regulations

14. TRANSPORT INFORMATION

UN CLASS: 3 (Flammable Liquids)

UN NUMBER: 1993

HAZCHEM CODE: Not Applicable

ADR/RID (GGVS/GGVE): 3^O(b)

IATA/ICAO: Class 3 packing group II

Keep away from incompatibilities and all sources of ignition.

Follow all national and local regulations.

15. REGULATION INFORMATION

NATIONAL REGULATION

UN CLASS: 3 (Flammable Liquids)

UN NUMBER: 1993

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: F Xn N

HAZARD CLASSIFICATION: R11

Xn; R65

Xi; R38

R67

R50-53

REGULATION IN ACCORDANCE WITH EC GUIDELINES

R-REGULATIONS: R11 - Highly flammable.

R38 - Irritating to skin.

R50 - Very toxic to aquatic organisms.

R53 - May cause long-term adverse effects in the aquatic environment.

R65 - Harmful: may cause long damage if swallowed.

R67 - Vapours may cause drowsiness and dizziness.

S-REGULATIONS: S9 - Keep container in a well-ventilated place.

S16 - Keep away from sources of ignition.

S29 - Do not empty into drains.

S33 - Take precautionary measures against static discharges.

S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.

S62 - If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

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.

TOKYO OHKA KOGYO CO., LTD.

MATERIAL SAFETY DATA SHEET **DE-14-C 1/8**