

SIGMA**CHEMICAL COMPANY**THE WORLD'S FOREMOST MANUFACTURER OF RESEARCH
BIOCHEMICALS AND DIAGNOSTIC REAGENTSLAB
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DATE: 01/30/92
CUST#: 2-043-15940
PO#: 70501**M A T E R I A L S A F E T Y D A T A S H E E T P A G E 1****IDENTIFICATION**PRODUCT #: T3501
CAS #: 119-93-7
MF: C14H16N2NAME: **O-TOLIDINE PRACTICAL GRADE****SYNONYMS**BIANISIDINE * (1,1'-BIPHENYL)-4,4'-DIAMINE-3,3'-DIMETHYL- * 4,4'-BI-O-
TOLIDINE * C.I. 37230 * C.I. AZOIC DIAZO COMPONENT 113 * 4,4'-
DIAMINO-3,3'-DIMETHYLBIPHENYL * 4,4'-DIAMINO-3,3'-DIMETHYLDIPHENYL *
DIAMINODITOLYL * 3,3'-DIMETHYLBENZIDIN * 3,3'-DIMETHYLBENZIDINE * 3,
3'-DIMETHYL-4,4'-BIPHENYLDIAMINE * 3,3'-DIMETHYLBIPHENYL-4,4'-DIAMINE
* 3,3'-DIMETHYL-4,4'-DIPHENYLDIAMINE * 3,3'-DIMETHYLDIPHENYL-4,4'-
DIAMINE * 4,4'-DI-O-TOLIDINE * FAST DARK BLUE BASE R * RCRA WASTE
NUMBER U095 * O-TOLIDIN * 2-TOLIDIN (GERMAN) * 2-TOLIDINA (ITALIAN) *
TOLIDINE * O-TOLIDINE * O,O'-TOLIDINE * 2-TOLIDINE * 3,3'-TOLIDINE *
O-TOLIDINE (ACGIH) ***TOXICITY HAZARDS**

RTECS NO: DD1225000

BENZIDINE, 3,3'-DIMETHYL-

REVIEWS, STANDARDS, AND REGULATIONS

ACGIH TLV-SUSPECTED CARCINOGEN; NO TWA 85IN8 5,577,86

IARC CANCER REVIEW:ANIMAL SUFFICIENT EVIDENCE IMEMDT 1,87,72

IARC CANCER REVIEW:HUMAN NO ADEQUATE DATA IMEMDT 1,87,72

IARC CANCER REVIEW:GROUP 2B INSUDL 7,56,87

NIOSH REL TO O-TOLIDINE-AIR:CL 0.02 MG/M3/60M MMWR** 37(S-7),26,88

NOHS 1974: HZD 84756; NIS 1; TNF 11; NOS 5; TNE 421

NOES 1983: HZD 84756000; TNF 8; NIS 854; NOS 20; TNE 9640; TFE 6005

EPA GENETOX PROGRAM 1988, POSITIVE: CARCINOGENICITY-MOUSE/RAT

EPA GENETOX PROGRAM 1988, POSITIVE: CELL TRANSFORM.-RLV F344 RAT
EMBRYOEPA GENETOX PROGRAM 1988, POSITIVE: MAMMALIAN MICRONUCLEUS; HISTIDINE
REVERSION-AMES TEST

EPA GENETOX PROGRAM 1988, INCONCLUSIVE: IN VITRO UDS-HUMAN FIBROBLAST

EPA TSCA CHEMICAL INVENTORY, JUNE 1990

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, MARCH 1991

NIOSH ANALYTICAL METHODS: SEE DYES 5013

NTP FIFTH ANNUAL REPORT ON CARCINOGENS, 1989 : ANTICIPATED TO BE
CARCINOGEN

OSHA ANALYTICAL METHOD #ID-71

TARGET ORGAN DATA

SKIN AND APPENDAGES (TUMORS)

TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS)

CONTINUED ON NEXT PAGE

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M A T E R I A L S A F E T Y D A T A S H E E T P A G E 2

CUST#: 2-043-15940
PO#: 70501

PRODUCT #: T3501
CAS #: 119-93-7
MF: C14H16N2

NAME: O-TOLIDINE PRACTICAL GRADE

TOXICITY HAZARDS

DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

HEALTH HAZARD DATA

ACUTE EFFECTS

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
CAUSES EYE AND SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.

CHRONIC EFFECTS

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

FIRST AID

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN. DISCARD CONTAMINATED CLOTHING AND SHOES.

PHYSICAL DATA

BOILING PT: 200 C
MELTING PT: 126 C TO 128 C
SOLUBILITY: ETHANOL-VERY SOLUBLE
WATER-SLIGHTLY SOLUBLE

ETHER-VERY SOLUBLE

FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA

WATER SPRAY.
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

CONTINUED ON NEXT PAGE

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M A T E R I A L S A F E T Y D A T A S H E E T PAGE 3

CUST#: 2-043-15940
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PRODUCT #: T3501
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MF: C14H16N2

NAME: O-TOLIDINE PRACTICAL GRADE

----- FIRE AND EXPLOSION HAZARD DATA -----

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

THIS MATERIAL, LIKE MOST MATERIALS IN POWDER FORM, IS CAPABLE OF
CREATING A DUST EXPLOSION.

----- REACTIVITY DATA -----

STABILITY

STABLE.

INCOMPATIBILITIES

STRONG OXIDIZING AGENTS

LIGHT SENSITIVE

AIR SENSITIVE

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

TOXIC FUMES OF:

CARBON MONOXIDE, CARBON DIOXIDE

NITROGEN OXIDES

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR.

----- SPILL OR LEAK PROCEDURES -----

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

EVACUATE AREA.

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY
RUBBER GLOVES.

WEAR DISPOSABLE COVERALLS AND DISCARD THEM AFTER USE.

SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.

AVOID RAISING DUST.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

WASTE DISPOSAL METHOD

DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A
CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

----- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE -----

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT
GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

SAFETY SHOWER AND EYE BATH.

USE ONLY IN A CHEMICAL FUME HOOD.

DO NOT BREATHE DUST.

CONTINUED ON NEXT PAGE

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PO#: 70501

PRODUCT #: T3501
CAS #: 119-93-7
MF: C14H16N2

NAME: **O-TOLIDINE PRACTICAL GRADE**

--- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE ---

AVOID ALL CONTACT.
READILY ABSORBED THROUGH SKIN.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
CARCINOGEN.
TOXIC.
IRRITANT.
MUTAGEN.

KEEP TIGHTLY CLOSED.
AIR AND LIGHT SENSITIVE
STORE IN A COOL DRY PLACE.
LABEL PRECAUTIONARY STATEMENTS

TOXIC
MAY CAUSE CANCER.
MAY CAUSE HERITABLE GENETIC DAMAGE.
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
DO NOT BREATHE DUST.
IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE (SHOW THE LABEL WHERE POSSIBLE).
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.
KEEP CONTAINER TIGHTLY CLOSED IN A COOL WELL VENTILATED PLACE.

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