

SAFETY DATA SHEET

Preparation Date: 05/21/2015

Revision Date: 05/21/2015

Revision Number: G1

Product identifier

Product code: T1084
Product Name: O-TOLIDINE, POWDER, REAGENT

Other means of identification

Synonyms: 3,3'-Dimethylbenzidine
2-Tolidine
3,3'-Dimethyl-(1,1'-biphenyl)-4,4'-diamine
3,3'-Dimethyl-4,4'-biphenyldiamine
3,3'-Dimethyl-4,4'-diaminobiphenyl
3,3'-Dimethyl-4,4'-diphenyldiamine
3,3'-Dimethylbenzidine
3,3'-Tolidine
4,4'-Bi-o-toluidine
4,4'-Di-o-toluidine
4,4'-Diamino-3,3'-dimethylbiphenyl
4,4'-Diamino-3,3'-dimethyldiphenyl
Bianisidine
C.I. 37230
C.I. Azoic Diazo Component 113
CI 37230
CI Azoic diazo component 113
Diaminoditoly
Diaminotolyl
Fast Dark Blue Base R
Orthotolidine
o-Tolidine
CAS #: 119-93-7
RTECS # DD1225000
CI#: 37230

Recommended use of the chemical and restrictions on use

Recommended use: Dyes. Pigment. Analytical reagent. Analytic Chemistry. Curing chemical. O-Tolidine is used in the determination of oxygen and chlorine present in water, and for the colorimetric determination of cations of gold, cerium, and manganese.

Uses advised against No information available

Supplier: Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2

Label elements

Warning

Hazard statements

Harmful if swallowed
Causes skin irritation
Causes eye irritation
Suspected of causing genetic defects
Suspected of causing cancer



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
Specific treatment (see .? on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Product code: T1084

Product name: O-TOLIDINE,
POWDER, REAGENT

2 / 12

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
o-Tolidine 119-93-7	119-93-7	100	*

4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126).

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact:

Flush eye with water for 15 minutes. Get medical attention.

Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms

Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling. Causes eye irritation. Inflammation of the eye is characterized by redness, watering and itching. May affect the liver. It may affect the kidneys.

Indication of any immediate medical attention and special treatment needed

Notes to Physician:

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media:

Dry chemical. Carbon dioxide (CO₂). Water spray. Foam.

Unsuitable Extinguishing Media:

No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products:

Carbon oxides, Nitrogen oxides

Specific hazards:

May be combustible at high temperatures
Material in powder form, capable of creating a dust explosion

Special Protective Actions for Firefighters

Specific Methods:

No information available.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Evacuate personnel to safe areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid dust formation. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Use appropriate tools to put the spilled solid in a suitable waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. All equipment used when handling the product must be grounded. Avoid dust formation. Remove all sources of ignition. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe vapours/dust. Do not ingest. Protect from light. Do not smoke. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Sensitive to light. Store in light-resistant containers. Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
o-Tolidine - 119-93-7	None	= 0.02 mg/m ³ Ceiling	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
o-Tolidine - 119-93-7	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
o-Tolidine 119-93-7	probable carcinogen	None

Appropriate engineering controls

Engineering measures to reduce exposure: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles. Safety glasses with side-shields.
- Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.
- Respiratory protection:** Wear respirator with dust filter.. Be sure to use an approved/certified respirator or equivalent..
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state: Solid.	Appearance: Crystalline powder.	Color: White.
Odor: No information available	Taste No information available	Molecular/Formula weight: 212.30
Formula: C14H16N2	Flash point (°C): 244°C	Flashpoint (°C/°F): 244°C/ 471°F
Flash Point Tested according to: Closed cup	Lower Explosion Limit (%): No information available	Upper Explosion Limit (%): No information available
Autoignition Temperature (°C/°F): No information available	pH: No information available	Melting point/range(°C/°F): 129°C/ 264.2°F
Boiling point/range(°C/°F): 200°C/ 392°F	Decomposition temperature(°C/°F): No information available	Bulk density: No information available
Specific gravity: 1	Density (g/cm3): No information available	Vapor pressure @ 20°C (kPa): No information available
Evaporation rate: No information available	Vapor density: No information available	VOC content (g/L): No information available
Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): No information available	Viscosity: No information available
Miscibility: No information available	Solubility: Soluble in Methanol Soluble in diethyl ether Partially soluble in cold water	

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents

Chemical stability

Stability:

Sensitive to light. Exposure to light accelerates decomposition. Stable under recommended storage conditions.

Possibility of Hazardous Reactions:

Hazardous polymerization does not occur

Conditions to avoid:

Heat. Ignition sources. Exposure to light. Incompatible materials.

Incompatible Materials:

Oxidizing agents.

Hazardous decomposition products:

Carbon oxides. Nitrogen oxides (NOx).

Other Information

Corrosivity:

No information available

Special Remarks on Corrosivity:

No information available

11. TOXICOLOGICAL INFORMATION

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Information on likely routes of exposure

Principal Routes of Exposure:

Skin. Eyes. Inhalation. Ingestion.

Acute Toxicity

Component Information

o-Tolidine - 119-93-7

LD50/oral/rat = 404 mg/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rat = No information available

LD50/dermal/rabbit = No information available

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 404mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation.

Eye Contact: Causes eye irritation.

Inhalation May cause respiratory tract irritation.

Ingestion Harmful if swallowed.

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Chronic exposure may affect the liver and kidneys. Prolonged or repeated ingestion may affect the liver, and kidneys.

Sensitization: No information available

Mutagenic Effects: May affect genetic material
Mutations in microorganisms
Experiments with bacteria and/or yeast have shown mutagenic effects
Mutagenic effects in mammalian somatic cells
Experiments with animal lymphocytes have shown mutagenic effects

Carcinogenic effects: Possibly carcinogenic to humans.

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
o-Tolidine	A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans	Group 2B - Supplement 7 [1987] Monograph 1 [1972]	Reasonably Anticipated To Be A Human Carcinogen	Present	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans*

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available
STOT - repeated exposure No information available
Target Organs: Kidneys. Liver.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

o-Tolidine - 119-93-7

Water Flea Data: 3200 ug/L 24 h EC50 Daphnia magna

Persistence and degradability: No information available

Bioaccumulative potential: Potential for bioconcentration in aquatic organisms is low to moderate.

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
p-Tolidine	None	None	None	U095

14. TRANSPORT INFORMATION

DOT

UN-No: UN3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.
Hazard Class: 9
Subsidiary Risk:
Packing Group: III
ERG No: 171
Marine Pollutant: No data available
DOT RQ (lbs): 10 lbs./4.54 kg
Symbol(s): G

TDG (Canada)

UN-No: UN3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

ADR

UN-No: UN3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.
Hazard Class: 9
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-A

14. TRANSPORT INFORMATION

MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA

UN-No: UN3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 9L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>o-Tolidine</i>	Present	Present KE-11235	Present	Present (4)-803 (9)-882	Present	Present	Present 204-358-0

U.S. Regulations

o-Tolidine

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 0742
New Jersey (EHS) List: 0742 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Special hazardous substance
Environmental hazard
Pennsylvania RTK - Environmental Hazard List: Present
Pennsylvania RTK - Special Hazardous Substances: Present
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
= 10 lb RQ
Louisiana Reportable Quantity List for Pollutants: Listed
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

Product code: T1084

Product name: O-TOLIDINE,
POWDER, REAGENT

10 / 12

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>o</i> -Tolidine	carcinogen	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>o</i> -Tolidine	= 4.54 kg final RQ	None	None	None	0.1 % de minimis concentration

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>o</i> -Tolidine	Not Applicable	Not Applicable

Canada**WHMIS hazard class:**

D1B Toxic materials
D2A Very toxic materials

***o*-Tolidine**

D1B D2A

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
<i>o</i> -Tolidine	0.1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
<i>o</i> -Tolidine	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
<i>o</i> -Tolidine	Not listed	Not listed

EU Classification**R-phrase(s)**

R22 - Harmful if swallowed.
R45 - May cause cancer.
R51 - Toxic to aquatic organisms.
R53 - May cause long-term adverse effects in the aquatic environment.

S -phrase(s)

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53 - Avoid exposure - obtain special instructions before use.

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

Components	Classification	Concentration Limits:	Safety Phrases
o-Tolidine	Xn; R22 Carc.Cat.2; R45 N; R51-53	No information	S53 S45 S61

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xn - Harmful.

N - Dangerous for the environment.

**16. OTHER INFORMATION**

Preparation Date: 05/21/2015
Revision Date: 05/21/2015
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet