

SAFETY DATA SHEET

Preparation Date: 7/16/2015

Revision Date: 7/16/2015

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: TO105
Product Name: O-TOLUIDINE, REAGENT

Other means of identification

Synonyms: 1-Amino-2-methylbenzene
 2-Amino-1-methylbenzene
 o-Aminotoluene
 Aniline, 2-methyl-
 1-Methyl-2-aminobenzene
 2-Methyl-1-aminobenzene
 o-Methylaniline
 2-Methylaniline
 2-Methylbenzamine
 o-Methylbenzenamine
 o-Tolylamine
 o-Toluidin

CAS #: 95-53-4
RTECS # XU2975000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Dyes.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 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
Acute toxicity - Inhalation (Gases)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A

Carcinogenicity	Category 1B
Flammable liquids	Category 4

Label elements

Danger

Hazard statements

Toxic if inhaled
 Harmful if swallowed
 Causes serious eye irritation
 Causes skin irritation
 May cause cancer
 Combustible liquid



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful in contact with skin

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
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wear eye/face protection
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking
 Keep cool
 Wear protective gloves

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Specific treatment (see .? on this label)

Specific treatment (see .? on this label)

In case of fire: Use CO₂, dry chemical, or foam to extinguish.

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

Call a POISON CENTER or doctor/physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
o-Toluidine 95-53-4	95-53-4	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:

Toxic by inhalation. Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms

Toxic by inhalation. Harmful if swallowed. Causes serious eye irritation. Causes skin irritation. May cause cancer. May cause irritation to mucous membranes. May cause irritation of respiratory tract.

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, mist, or foam. .

Unsuitable Extinguishing Media:

Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical**Hazardous Combustion Products:**

Carbon oxides. Nitrogen oxides

Specific hazards:

Combustible material
May be ignited by heat, sparks or flames
Container explosion may occur under fire conditions or when heated
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)
Fire may produce irritating and/or toxic gases

Special Protective Actions for Firefighters**Specific Methods:**

For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out. Dike fire-control water for later disposal; do not scatter the material.

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:**

Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded.

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. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods and material for containment and cleaning up**Methods for containment**

Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up

Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. 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. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Remove all sources of ignition. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Keep away from sources of ignition - no smoking. Protect from light. 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. Flushed with nitrogen. Keep tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
o-Toluidine 95-53-4	5 ppm TWA 22 mg/m ³ TWA	None	2 ppm TWA	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
o-Toluidine 95-53-4	2 ppm TWA 8.8 mg/m ³ TWA	2 ppm TWA	2 ppm TWA	2 ppm TWAEV 8.8 mg/m ³ TWAEV

Australia and Mexico

Components	Australia	Mexico
o-Toluidine 95-53-4	probable carcinogen	5 ppm TWA 22 mg/m ³ TWA

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles
- Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.
- Respiratory protection:** Vapor respirator. 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

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: No information available	Color: Colorless to pale yellow.
Odor: Unpleasant.	Taste No information available	Molecular/Formula weight: 107.2g/mol
Formula: C7H9N	Flammability: Combustible liquid	Flash point (°C): 85°C
Flashpoint (°C/°F): 85°C/185°F	Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): 481.7°C/ 899°F
Lower Explosion Limit (%): 1.5	Upper Explosion Limit (%): 7.5	pH: 9
Melting point/range(°C/°F): -16°C/3°F	Boiling point/range(°C/°F): 200°C/392°F	Bulk density: No information available
Decomposition temperature(°C/°F): No information available	Density (g/cm3): 1.01	Specific gravity: No information available
Vapor pressure @ 20°C (kPa): 0.2	Evaporation rate: No information available	Vapor density: 3.69
VOC content (g/L): No information available	Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): log Pow 1.32
Viscosity: No information available	Miscibility: No information available	Solubility: Soluble in Methanol Soluble in diethyl ether Very slightly soluble in cold water Very slightly soluble in hot water

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents
Reactive with acids

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. Incompatible materials. Exposure to light.

Incompatible Materials:

Oxidizing agents. Acids.

Hazardous decomposition products:

Nitrogen oxides (NOx). Carbon oxides.

Other Information

Corrosivity:

Non-corrosive in presence of glass.

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Eyes. Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

o-Toluidine - 95-53-4

LD50/oral/rat = 670 mg/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rat = No information available

LD50/dermal/rabbit = 3235 mg/kg Dermal LD50 rabbit

LC50/inhalation/rat = 862 ppm Inhalation LC50 Rat 4 h

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 670mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = 3235mg/kg

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = 862ppm

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:

May be harmful in contact with skin. Causes skin irritation.

Eye Contact:

Causes serious eye irritation.

Inhalation

Toxic by inhalation. Material may be irritating to mucous membranes and upper respiratory tract. May cause dizziness and headache. May cause methemoglobinemia (the formation of methemoglobin in the blood which causes deficient oxygenation of the blood due to decreased available hemoglobin). Methemoglobinemia can lead to cyanosis (bluish skin and lips due to deficient oxygenation of the blood).

Ingestion Harmful if swallowed. Causes digestive (gastrointestinal) tract irritation. May affect the urinary system (bladder). May affect the kidneys. May affect liver .

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 cause central nervous system effects.

Sensitization: No information available

Mutagenic Effects: No information available

Carcinogenic effects: May cause cancer.

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
<i>o</i> -Toluidine	Monograph 100F [2012] Monograph 99 [2010] upgraded from Group 2A to Group 1 in 2008 Monograph 77 [2000] Supplement 7 [1987] Monograph 27 [1982]	A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans	Known Human Carcinogen	Present	Not listed	Present includes pure substance or mixtures containing >=0.1% (w/w) concentration. Restricted use: all

Reproductive toxicity No data is available

Reproductive Effects: May cause adverse reproductive effects based on animal data

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: Blood. Kidneys. Bladder.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Toxic to aquatic organisms.

o-Toluidine - 95-53-4

Freshwater Algae Data: 3.7 mg/L EC50 *Desmodesmus subspicatus* 96 h

3.9 mg/L EC50 *Desmodesmus subspicatus* 72 h

Freshwater Fish Species Data: 30mg/L LC50 *Leuciscus idus melanotus* 48h

150mg/L LC50 *Oryzias latipes* 96h

Water Flea Data: 0.31-0.86 mg/L LC50 *Daphnia magna* 48hr

o-Toluidine - 95-53-4

Persistence and degradability: No information available

Bioaccumulative potential: No information available

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:

Dispose of as unused product. Dispose of in accordance with federal, state and local regulations Do not re-use empty containers 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
<i>o</i> -Toluidine	None	None	None	U328

14. TRANSPORT INFORMATION

DOT

UN-No: UN1708
Proper Shipping Name: Toluidines, liquid
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
ERG No: 153
Marine Pollutant No data available
DOT RQ (lbs): No information available
Symbol(s): +, R3

TDG (Canada)

UN-No: UN1708
Proper Shipping Name: Toluidines, liquid
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

ADR

UN-No: UN1708
Proper Shipping Name: Toluidines, liquid
Hazard Class: 6.1
Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

14. TRANSPORT INFORMATION

IMO / IMDG

UN-No: UN1708
Proper Shipping Name: Toluidines, liquid
Hazard Class: 6.1
Subsidiary Risk: P
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1708
Proper Shipping Name: Toluidines, liquid
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1708
Proper Shipping Name: Toluidines, liquid
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

IATA

UN-No: UN1708
Proper Shipping Name: Toluidines, liquid
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 6L
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</i> -Toluidine	Present	Present KE-23446	Present	Present (3)-186	Present	Present	Present 202-429-0

U.S. Regulations

o-Toluidine

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 1442
New Jersey (EHS) List: 1442 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
 Special hazardous substance

o-Toluidine

- 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:
100 lb RQ
1 lb RQ
- Louisiana Reportable Quantity List for Pollutants: 100lbfinal RQ
45.4kgfinal RQ
- 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)

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> -Toluidine	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> -Toluidine	100 lb final RQ 45.4 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> -Toluidine	Not Applicable	03/07/1986 12/19/1995

Canada

WHMIS hazard class:

- B3 Combustible liquid
- D1A Very toxic materials
- D2A Very toxic materials

***o*-Toluidine**

B3 D1A 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> -Toluidine	0.1 %

Inventory

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

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
o-Toluidine	Not listed	Not listed

EU Classification

R-phrase(s)

R36 - Irritating to eyes.
R45 - May cause cancer.
R50 - Very toxic to aquatic organisms.
R23/25 - Toxic by inhalation and if swallowed.

S -phrase(s)

S53 - Avoid exposure - obtain special instructions before use.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

Components	Classification	Concentration Limits:	Safety Phrases
o-Toluidine	T; R23/25 Xi; R36 Carc.Cat.2; R45 N; R50	No information	S53 S45 S61

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

Indication of danger:

Xi - Irritant.
N - Dangerous for the environment.
T - Toxic

T



Xi



N



16. OTHER INFORMATION

16. OTHER INFORMATION

Preparation Date: 7/16/2015
Revision Date: 7/16/2015
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