

SAFETY DATA SHEET

Preparation Date: No data available

Revision Date: Not Applicable

Revision Number: Not Applicable

1. IDENTIFICATION

Product identifier

Product code: T2383
Product Name: TOLUENE-D8, 99.6 ATOM PERCENT D

Other means of identification

Synonyms: Octdeuterotoluene
 Perdeuterated toluene
 Perdeuteriotoluene
 (2H8)Toluene
 Benzene-d5, methyl-d3-
 Deuterated toluene

CAS #: 2037-26-5
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
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
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Flammable liquids	Category 2

Label elements

Product code: T2383

Product name: TOLUENE-D8, 99.6
 ATOM PERCENT D

Danger

Hazard statements

Harmful if swallowed
Causes skin irritation
Causes serious eye irritation
Suspected of damaging fertility or the unborn child
May cause respiratory irritation. May cause drowsiness or dizziness
May cause damage to organs through prolonged or repeated exposure
May be fatal if swallowed and enters airways
Highly flammable liquid and vapor



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 eye/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/./? /equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Wear protective gloves

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

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 skin irritation occurs: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting
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
Toluene-d8, 99.6 atom % 2037-26-5	2037-26-5	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 breathing is difficult, give oxygen. If not breathing, give artificial respiration. 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. Causes serious eye irritation. Vapors irritating to eyes and respiratory tract. Drowsiness. Dizziness. May cause headache. Coughing and wheezing. May cause pulmonary edema. Ingestion may cause nausea, vomiting, and diarrhea.

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 monoxide; Carbon dioxide

Specific hazards:

Flammable
May be ignited by heat, sparks or flames
Vapor may travel considerable distance to source of ignition and flash back
Vapors may form explosive mixtures with air
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)
Container explosion may occur under fire conditions or when heated
Fire may produce irritating, corrosive and/or toxic gases

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

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

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. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

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**

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. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Take precautionary measures against static discharges. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

Reducing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Toluene-d8, 99.6 atom % 2037-26-5	None	None	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Toluene-d8, 99.6 atom % 2037-26-5	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Toluene-d8, 99.6 atom % 2037-26-5	None	None

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.
Odor: Benzene-like.	Taste No information available	Molecular/Formula weight: 100.19
Formula: C7D8	Flammability: Flammable	Flash point (°C): 10.2°C
Flashpoint (°C/°F): 10.2°C/ 50.4°F	Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): No information available
Lower Explosion Limit (%): No information available	Upper Explosion Limit (%): No information available	pH: No information available
Melting point/range(°C/°F): No information available	Boiling point/range(°C/°F): 110°C/ 230°F	Bulk density: No information available
Decomposition temperature(°C/°F): No information available	Density (g/cm3): No information available	Specific gravity: 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): 1.6	Partition coefficient (n-octanol/water): No information available
Viscosity: No information available	Miscibility: No information available	Solubility: Very slightly soluble in cold water

10. STABILITY AND REACTIVITY

Reactivity

Highly reactive with reducing agents

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Reducing agents.

Hazardous decomposition products: 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:
Ingestion. Skin. Eyes. Inhalation.

Product code: T2383

Product name: TOLUENE-D8, 99.6
ATOM PERCENT D

6 / 13

Acute Toxicity

Component Information

Toluene-d8, 99.6 atom % - 2037-26-5

LD50/oral/rat = 636 mg/kg
LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = 14100 mg/kg
LC50/inhalation/rat = 49000 ppm 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 = 636mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = 8390mg/kg

LD50/dermal/rat
VALUE -Acute Tox Dermal = 12124mg/kg

LC50/inhalation/rat
VALUE-Vapor = 12.5mg/l
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = 19900 mg/m³
VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation.

Eye Contact: Causes serious eye irritation. Causes conjunctivitis. Causes lacrimation. Causes blepharospasm, corneal edema, corneal abrasions. Irritating, but will not permanently injure eye tissue. Exposure to high concentration of vapor may cause pupillary dilation or pupillary constriction, and impaired pupillary reaction.

Inhalation

Irritating to respiratory system. May cause nausea, vomiting. May cause bronchospasms. May cause bronchitis. May cause chemical pneumonitis. It may cause pulmonary edema. Inhalation of high concentrations of vapors may cause dizziness or suffocation. Inhalation of high concentrations of vapor may cause anesthetic effects. It may affect behavior/central nervous system (excitation and wakefulness followed by central nervous system depression - headache, irritability, nervousness, insomnia, ataxia, seizures, tremors, hallucinations, euphoria, memory loss, somnolence, fatigue, sedation, general anesthetic). May affect cardiovascular system (bradycardia, tachycardia, cardiac arrhythmias). May affect the brain. It may affect the cardiovascular system (hypotension, cardiac arrhythmias, cardiac arrest). May affect the kidneys. It may affect the blood (changes in white blood cell count, changes in other cell count). It may affect the bone marrow (changes in bone marrow).

Ingestion

Harmful if swallowed. Aspiration hazard if swallowed. Aspiration into the lungs can cause chemical pneumonitis. Causes digestive (gastrointestinal) tract irritation. Ingestion may cause nausea, vomiting, diarrhea. May cause abdominal pain. May affect the cardiovascular system (hypertension, increase in pulse rate, arrhythmias). It may affect the brain. May affect behavior/central nervous system (muscle contraction or spasticity). May affect behavior/central nervous system (ataxia). May affect behavior/central nervous system (convulsions). May affect respiration (acute pulmonary edema). May affect blood (changes in serum composition).

Aspiration hazard

May be fatal if swallowed and enters airways.

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

Prolonged or repeated skin contact may cause dermatitis and defatting, dryness, and cracking of the skin. Prolonged or repeated inhalation may cause nausea, vomiting, abdominal pain, loss of appetite, and weight loss. Prolonged or repeated inhalation may affect respiration (respiratory failure). Prolonged or repeated inhalation may cause central nervous system effects. Prolonged or repeated ingestion or inhalation may affect the brain (degenerative changes). Prolonged or repeated inhalation may affect the peripheral nervous system (weakness, peripheral neuropathy with paresthesia - a tingling, pricking, or numbness of the skin (known as the feeling of "pins and needles") generally of the hands and feet (extremities)). Prolonged or repeated inhalation may cause decreased visual acuity, impaired color vision, optic atrophy, blindness, and ototoxicity. Prolonged or repeated inhalation may affect the cardiovascular system (dysrhythmias, tachycardia, cardiomyopathy). Prolonged or repeated inhalation may affect the liver. Prolonged or repeated inhalation may affect the kidneys. Prolonged or repeated inhalation may affect the adrenal gland. Prolonged or repeated inhalation may affect the blood (pigmented or nucleated red blood cells). Prolonged or repeated inhalation may cause metabolic acidosis, hypokalemia. Prolonged or repeated inhalation may cause rhabdomyolysis, a breakdown of muscle fibers resulting in the release of muscle fiber contents (myoglobin) into the bloodstream. This may be harmful to the kidneys and frequently result in kidney damage. Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged or repeated ingestion may affect the blood (changes in serum composition). Prolonged or repeated ingestion may affect the spleen. Prolonged or repeated ingestion may affect the adrenal gland. Prolonged or repeated ingestion may affect the thymus gland. Prolonged or repeated ingestion may affect the blood (changes in white blood cell count). Prolonged or repeated inhalation may affect the blood (changes in white blood cell count). Prolonged or repeated inhalation may affect the blood (changes in red blood cell count). Prolonged or repeated ingestion may affect hearing. Prolonged or repeated ingestion may cause loss of appetite. Prolonged or repeated ingestion may cause weight loss.

Sensitization:

No information available

Mutagenic Effects: May affect genetic material
Experiments with bacteria and/or yeast have shown mutagenic effects

Carcinogenic effects: Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Toluene-d8, 99.6 atom %	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity Suspected of damaging fertility or the unborn child

Reproductive Effects: May cause adverse developmental effects
May cause harm to the unborn child
Crosses the placenta in humans
Excreted in maternal milk in human

Developmental Effects: No information available

Teratogenic Effects: May cause birth defects (teratogenic effects)

Specific Target Organ Toxicity

STOT - single exposure STOT - single exposure. central nervous system.
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.
Target Organs: Mucous membrane. Respiratory system. Skin. Central nervous system. Eyes.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

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:
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
Toluene-d8, 99.6 atom %	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1294
Proper Shipping Name: Toluene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: None
ERG No: 130
Marine Pollutant: No data available
DOT RQ (lbs): No information available

TDG (Canada)

UN-No: UN1294
Proper Shipping Name: Toluene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

ADR

UN-No: UN1294
Proper Shipping Name: Toluene
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1294
Proper Shipping Name: Toluene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-E
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1294
Proper Shipping Name: Toluene
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1294
Proper Shipping Name: Toluene
Hazard Class: 3

14. TRANSPORT INFORMATION

Subsidiary Risk: No information available
Packing Group: II
Description: No information available

IATA

UN-No: UN1294
Proper Shipping Name: Toluene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 3L
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>Toluene-d8, 99.6 atom %</i>	Not Listed	Not present	Not present	Not present	Present	Present	Present 218-009-5

U.S. Regulations**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.****Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (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>Toluene-d8, 99.6 atom %</i>	Not Listed	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>Toluene-d8, 99.6 atom %</i>	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Toluene-d8, 99.6 atom %</i>	Not Applicable	Not Applicable

Canada**WHMIS hazard class:**

B2 Flammable liquid
D2A Very toxic materials

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.

Inventory

Components	Canada (DSL)	Canada (NDSL)
Toluene-d8, 99.6 atom %	Not Listed	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Toluene-d8, 99.6 atom %	Not listed	Not listed

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

R11 - Highly flammable.

R22 - Harmful if swallowed.

R36/37/38 - Irritating to eyes, respiratory system and skin.

S -phrase(s)

none

Components	Classification	Concentration Limits:	Safety Phrases
Toluene-d8, 99.6 atom %		No information	

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

Indication of danger:

F - Highly flammable.

Xn - Harmful.

**16. OTHER INFORMATION**

16. OTHER INFORMATION

Revision Date: Not Applicable
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