1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Chemical Name  Musk Xylene

Catalogue #  M800200

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Uses  To be used only for scientific research and development. Not for use in humans or animals.

1.3 Details of the Supplier of the Safety Data Sheet

Company  Toronto Research Chemicals
2 Brisbane Road
Toronto, ON  M3J 2J8
CANADA

Telephone  +14166659696
FAX   +14166654439
Email  orders@trc-canada.com

1.4 Emergency Telephone Number

Emergency#  +1(416) 665-9696 between 0800-1700 (GMT-5)

2. HAZARDS IDENTIFICATION

WHMIS Classification (Canada)  WHMIS Symbols (Canada)
D2B  Toxic Material Causing Other Toxic Effects
     Carcinogen

2.1/2.2 Classification of the Substance or Mixture and Label Elements

GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Explosives (Division 1.1)
Carcinogenicity (Category 2)
Hazardous to the Aquatic Environment, Acute Hazard (Category 1)
Hazardous to the Aquatic Environment, Long-Term Hazard (Category 1)

GHS Hazards Identification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Signal Word  Warning

GHS Hazard Statements
H351  Suspected of causing cancer.
H400  Very toxic to aquatic life.
H410  Very toxic to aquatic life with long lasting effects.

GHS Precautionary Statements
P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No
2.3 Unclassified Hazards/Hazards Not Otherwise Classified

No data available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Molecular Formula: \(C_{12}H_{15}N_3O_6\)  
Molecular Weight: 297.26

CAS Registry #: 81-15-2  
EC#: 201-329-4

Synonyms

- 1-tert-Butyl-3,5-dimethyl-2,4,6-trinitrobenzene; 2,4,6-Trinitro-5-tert-butyl-m-xylene; 5-tert-Butyl-2,4,6-trinitro-m-xylene; Moschus xylol; Musk xylol; NSC 59844; Xylene Musk; 2,4,6-Trinitro-1,3-dimethyl-5-tert-butylbenzene; 2,4,6-Trinitro-3,5-dimethyl-tert-butylbenzene;

3.2 Mixtures

Not a mixture.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice
If medical attention is required, show this safety data sheet to the doctor.

If Inhaled
If inhaled, move casualty to fresh air. If not breathing, give artificial respiration and consult a physician.

In Case of Skin Contact
Remove contaminated clothing and shoes. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In Case of Eye Contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If Swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Seek medical attention.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or section 11.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

No data available.

5. FIREFIGHTING MEASURES

5.1 Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special Hazards Arising from the Substance or Mixture

Carbon oxides, Nitrogen oxides

5.3 Advice for Firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further Information
6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures
Use recommended personal protective equipment (see Section 8). Adequate ventilation must be provided to ensure vapours or mists are not inhaled. Vapours are heavier than air and may accumulate in low areas. All sources of ignition, including sources of static discharge, must be removed from area.

6.2 Environmental Precautions
Material should not be allowed to enter the environment. Prevent further spillage or discharge into drains, if safe to do so.

6.3 Methods and Materials for Containment and Cleaning Up
Contain the spill and then collect using non-combustible absorbent material (such as clay, diatomaceous earth, vermiculite or other appropriate material). Place material in a suitable, sealable container and then dispose according to local/national regulations and guidance (see Section 13).

6.4 Reference to Other Sections
For protective equipment, refer to Section 8. For disposal, see Section 13.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Keep in a dry place.

Storage conditions: Refrigerator

7.3 Specific End Uses
For scientific research and development only. Not for use in humans or animals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters
Contains no components that have established occupation exposure limits.

8.2 Exposure Controls

Appropriate Engineering Controls
A laboratory fumehood or other appropriate form of local exhaust ventilation should be used to avoid exposure.

Personal Protective Equipment
All recommendations below are advisory in nature and a risk assessment should be performed by the employer/end user prior to use of this product. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

Eye/Face Protection
Safety goggles or face shield. All equipment should have been tested and approved under appropriate standards, such as NIOSH (US), CSA (Canada), or EN 166 (EU).

Skin Protection
Gloves should be used when handling this material. Gloves are to be inspected prior to use. Contaminated gloves are to be removed using proper glove removal technique so that the outer surface of the glove does not contact bare skin. Dispose of contaminated gloves after use in compliance with good laboratory practices and local requirements.

Gloves used for incidental exposures (splash protection) should be designated as “chemical resistant” by EU standard EN 374 with the resistance codes corresponding to the anticipated use of the material. Unrated gloves are not recommended.
Suggested gloves: AnsellPro Sol-Vex nitrile gloves style 37-175, 15 mil thickness.
Penetration time has not been determined.

Gloves used for prolonged direct exposure (immersion) should be designated “chemical resistant” as per EN 734 with the resistance codes corresponding to the anticipated use of the material.
Penetration time has not been determined.

These recommendations may not apply if the material is mixed with any other chemical, or dissolved into a solution. A risk assessment must be performed to ensure the gloves will still offer acceptable protection.

**Body Protection**
Fire resistant (Nomex) lab coat or coveralls.

**Respiratory Protection**
Recommended respirators are NIOSH-approved N100 or CEN-approved FFP3 particulate respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face supplied air respirator must be used.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Appearance</td>
<td>Off-White to Pale Yellow Solid</td>
</tr>
<tr>
<td>B) Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>C) Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>D) pH</td>
<td>No data available</td>
</tr>
<tr>
<td>E) Melting Point/Freezing Point</td>
<td>104 - 106°C</td>
</tr>
<tr>
<td>F) Initial Boiling Point/Boiling Range</td>
<td>No data available</td>
</tr>
<tr>
<td>G) Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>H) Evaporation Rate</td>
<td>No data available</td>
</tr>
<tr>
<td>I) Flammability (Solid/Gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>J) Upper/Lower Flammability/Explosive Limits</td>
<td>No data available</td>
</tr>
<tr>
<td>K) Vapour Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>L) Vapour Density</td>
<td>No data available</td>
</tr>
<tr>
<td>M) Relative Density</td>
<td>No data available</td>
</tr>
<tr>
<td>N) Solubility</td>
<td>Chloroform (Slightly), Ethyl Acetate (Slightly)</td>
</tr>
<tr>
<td>O) Partition Coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Q) Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>R) Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>S) Explosive Properties</td>
<td>No data available</td>
</tr>
<tr>
<td>T) Oxidizing Properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 9.2 Other Information

No data available.

### 10. STABILITY AND REACTIVITY

#### 10.1 Reactivity
No data available.

#### 10.2 Chemical Stability
Stable under recommended storage conditions.

#### 10.3 Possibility of Hazardous Reactions
No data available.

#### 10.4 Conditions to Avoid
Heat, spark, flames, shock, friction.

#### 10.5 Incompatible Materials
Strong oxidizing agents.

#### 10.6 Hazardous Decomposition Products

In the event of fire: See section 5. Other decomposition products: No data available.

### 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on Toxicological Effects

**A) Acute Toxicity**

- Oral LD50: Rat - > 10,000 mg/kg
- Inhalation LC50: No data available.
Dermal LD50: Rabbit - > 15,000 mg/kg

B) Skin Corrosion/Irritation
No data available

C) Serious Eye Damage/Irritation
No data available

D) Respiratory or Skin Sensitization
No data available

E) Germ Cell Mutagenicity
No data available

F) Carcinogenicity
Possible human mutagen. Laboratory results have shown mutagenicity in several model systems.

G) Reproductive Toxicity/Teratogenicity
No data available

H) Single Target Organ Toxicity - Single Exposure
No data available

I) Single Target Organ Toxicity - Repeated Exposure
No data available

J) Aspiration Hazard
No data available

K) Potential Health Effects and Routes of Exposure

Inhalation
May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion
May be harmful if swallowed.

Skin
May be harmful if absorbed through skin. May cause skin irritation.

Eyes
May cause eye irritation.

L) Signs and Symptoms of Exposure
The most important known symptoms and effects are described in the labeling (see section 2.2) and/or section 11.

To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

M) Additional Information
RTECS: CZ7210000

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish LC50 - Oryzias latipes - 3.75 ppm - 48 h

12.2 Persistence and Degradability
No data available.

12.3 Bioaccumulative Potential
No data available.

12.4 Mobility in Soil
No data available.

12.5 Results of PBT and vPvB Assessment
No data available.

12.6 Other Adverse Effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods
A) Product
Product may be burned in an incinerator equipped with afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Ensure that all Federal and Local regulations regarding
the disposal and destruction of this material are followed.

B) Contaminated Packaging
Dispose of as above.

C) Other Considerations
Product is not to be disposed of in sanitary sewers, storm sewers, or landfills.

14. TRANSPORT INFORMATION

14.1 UN Number
DOT (US): UN2956  IATA: UN2956  IMDG: UN2956  ADR/RID: UN2956

14.2 UN Proper Shipping Name
DOT (US)/IATA:
  Musk xylene
IATA Passenger: Not permitted for transport  IATA Cargo: Not permitted for transport
IMDG/ADR/RID:
  MUSK XYLENE

14.3 Transport Hazard Class(es)
DOT (US): 4.1  IATA: 4.1  IMDG: 4.1  ADR/RID: 4.1

14.4 Packing Group
DOT (US): III  IATA: N/A  IMDG: III  ADR/RID: III

14.5 Environmental Hazards
DOT (US): None  IATA: None  IMDG: Marine pollutant  ADR/RID: None

14.6 Special Precautions for User
None

15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of WHMIS (Canada), OSHA 1910.1200 (US), and EU Regulation EC No. 1907/2006 (European Union).

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture
A) Canada
  DSL/NDSL Status: This product or a component of this product is registered on the Canadian DSL/NDSL.
B) United States
  TSCA Status: This product or a component is listed on the US EPA TSCA.
C) European Union
  ECHA Status: This product is not registered with the EU ECHA.

15.2 Chemical Safety Assessment
No data available

16. OTHER INFORMATION

16.1 Revision History
Original Publication Date: 9/5/2014

16.2 List of Abbreviations
LD50  Median lethal dose of a substance required to kill 50% of a test population.
LC50  Medial lethal concentration of a substance required to kill 50% of a test population.
LDLo  Lowest known lethal dose
TDLo  Lowest known toxic dose
IARC  International Agency for Research on Cancer
NTP  National Toxicology Program
RTECS  Registry of Toxic Effects of Chemical Substances

16.3 Further Information
Copyright 2015. Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.