SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
Product name: m-Xylylenediamine
Product Number: X1202
Brand: Aldrich
CAS-No.: 1477-55-0

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet
Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES
Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone
Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
- Acute toxicity, Oral (Category 4), H302
- Acute toxicity, Inhalation (Category 4), H332
- Skin corrosion (Category 1B), H314
- Serious eye damage (Category 1), H318
- Skin sensitization (Sub-category 1B), H317
- Short-term (acute) aquatic hazard (Category 3), H402
- Long-term (chronic) aquatic hazard (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements
Pictogram
Signal word: Danger

Hazard statement(s):
- H302 + H332: Harmful if swallowed or if inhaled.
- H314: Causes severe skin burns and eye damage.
- H317: May cause an allergic skin reaction.
- H412: Harmful to aquatic life with long lasting effects.

Precautionary statement(s):
- P261: Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
- P264: Wash skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P272: Contaminated work clothing must not be allowed out of the workplace.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
- P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P333 + P313: If skin irritation or rash occurs: Get medical advice/ attention.
- P363: Wash contaminated clothing before reuse.
- P405: Store locked up.
- P501: Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
Corrosive to the respiratory tract.

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>1,3-Bis(aminomethyl)benzene</th>
<th>α,α′-Diamino-m-xylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>C₈H₁₂N₂</td>
<td></td>
</tr>
<tr>
<td>Molecular weight</td>
<td>136.19 g/mol</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>1477-55-0</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>216-032-5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>m-phenylenebis(methylamine)</td>
<td>Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1B; Aquatic Acute 3; Aquatic Chronic 3; H302,</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

Aldrich - X1202
SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

In case of eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Nitrogen oxides (NOx)
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
5.4 **Further information**
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 **Environmental precautions**
Do not let product enter drains.

6.3 **Methods and materials for containment and cleaning up**
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® OH⁻, Merck Art. No. 101596). Dispose of properly. Clean up affected area.

6.4 **Reference to other sections**
For disposal see section 13.

---

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**

**Advice on safe handling**
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

**Hygiene measures**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**

**Storage conditions**
Tightly closed.

**Storage class**
Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

**Ingredients with workplace control parameters**
### Component Table

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>m-phenylenebis(methylamine)</td>
<td>1477-55-0</td>
<td>C</td>
<td>0.018 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety hazard</td>
<td>C</td>
<td>0.1 mg/m3</td>
<td></td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential for dermal absorption</td>
<td>C</td>
<td>0.1 mg/m3</td>
<td></td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

#### Appropriate engineering controls
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### Personal protective equipment

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles.

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Full contact**
Material: Chloroprene  
Minimum layer thickness: 0.6 mm  
Break through time: 480 min  
Material tested: Camapren® (KCL 722 / Aldrich Z677493, Size M)

**Splash contact**
Material: Nature latex/chloroprene  
Minimum layer thickness: 0.6 mm  
Break through time: 30 min  
Material tested: Lapren® (KCL 706 / Aldrich Z677558, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
protective clothing
**Respiratory protection**  
required when vapours/aerosols are generated.  
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**  
Do not let product enter drains.

---

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: clear, liquid Color: colorless</td>
</tr>
<tr>
<td>b) Odor</td>
<td>amine-like</td>
</tr>
<tr>
<td>c) Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>12 at 1 g/l at 20 °C (68 °F)</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point: 14 °C (57 °F) - OECD Test Guideline 102</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>265 °C 509 °F at 993 hPa - lit.</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>113 °C (235 °F) - closed cup</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 or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>k) Vapor pressure</td>
<td>0.01 hPa at 25 °C (77 °F) - OECD Test Guideline 104</td>
</tr>
<tr>
<td>l) Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>m) Density</td>
<td>1.032 g/cm3 at 25 °C (77 °F) - lit.</td>
</tr>
<tr>
<td>n) Water solubility</td>
<td>100 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - miscible in all proportions</td>
</tr>
<tr>
<td>o) Partition coefficient: n-octanol/water</td>
<td>log Pow: ca.0.18 at 25 °C (77 °F) - OECD Test Guideline 107 - Bioaccumulation is not expected.</td>
</tr>
<tr>
<td>p) Autoignition temperature</td>
<td>395 - 405 °C (743 - 761 °F) at 1,006.9 - 1,013.1 hPa</td>
</tr>
<tr>
<td>q) Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>r) Viscosity</td>
<td>6.78 mm2/s at 20 °C (68 °F) - OECD Test Guideline 114 -</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 safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Strong heating.

10.5 Incompatible materials
acids, Acid chlorides, Acid anhydrides, Oxidizing agents, Chloroformates

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 930 mg/kg
Remarks: (RTECS)
Acute toxicity estimate Inhalation - 4 h - 11 mg/l
(Expert judgment)
Inhalation: No data available
LD50 Dermal - Rat - male and female - > 3,100 mg/kg
Remarks: (ECHA)

Skin corrosion/irritation
Skin - Rat
Result: Causes burns. - 4 h

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse
Result: positive
(OECD Test Guideline 429)

Germ cell mutagenicity
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 473
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Bone marrow
Method: OECD Test Guideline 474
Result: negative

**Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Corrosive to the respiratory tract.

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**11.2 Additional Information**

**RTECS**: PF8970000
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

---

**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to fish  semi-static test LC50 - Oryzias latipes (Orange-red killifish) - 87.6 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia  static test EC50 - Daphnia magna (Water flea) - 15.2 mg/l - 48 h
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada
Proper shipping name: POLYAMINES, LIQUID, CORROSIVE, N.O.S. (m-phenylenebis(methylamine))

**IATA**  
UN number: 2735  Class: 8  Packing group: II  
Proper shipping name: Polyamines, liquid, corrosive, n.o.s. (m-phenylenebis(methylamine))

### SECTION 15: Regulatory information

**SARA 302 Components**  
This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**  
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**  
Acute Health Hazard

**Massachusetts Right To Know Components**  
No components are subject to the Massachusetts Right to Know Act.

### SECTION 16: Other information

**Further information**  
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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