OXFORD LAB FINE CHEM LLP

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Oxford
Range of
Laboratory Chemicals

MATERIAL SAFETY DATA SHEET

N,N,N,N -TETRA METHYL DIAMINO DIIPHENYL METHANE (For Synthesis)

MSDS CAS: 101-61-1

Section 1: Chemical Product and Company Identification

Section 1: Chemical Product
Product Name: N,N,N,N-TETRA METHYL DIAMINO DIIPHENYL METHANE
CAS#: 101-61-1
Synonym: Methylene base; Michler's Base; Mchler's hydride; Michler's Methane; reduced Michler's
Chemical Name: Aniline, 4,4'-methylenebis(N,N-dimethyl-
Chemical Formula: C17-H22-N2

Brand: OXFORD

Details Of The Supplier Of The Safety Data Sheet:

Company identification: **OXFORD LAB FINE CHEM LLP**
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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
N,N,N′,N′-Tetramethyl Diamino Diphenyl Methane	101-61-1	100

Toxicological Data on Ingredients: N,N,N′,N′-Tetramethyl Diamino Diphenyl Methane: ORAL (LD50): Acute: 3160 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified 2 (Some evidence.) by NTP. 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, liver, thyroid. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: **Not available.**

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: **Not available.**

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.
Auto-Ignition Temperature: Not available.
Flash Points: Not available.
Flammable Limits: Not available.
Products of Combustion: These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Slightly explosive in presence of open flames and sparks. Non-explosive in presence of shocks.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: As with most organic solids, fire is possible at elevated temperatures

Special Remarks on Explosion Hazards:
Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:

Keep locked up. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.

Storage: **Keep container tightly closed. Keep container in a cool, well-ventilated area.**

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

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.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: **Not available.**

Section 9: Physical and Chemical Properties

Physical state and appearance:	**Solid. (Crystalline powder.)**
Odor:	**Odorless.**
Taste:	**Not available.**
Molecular Weight:	**254.38 g/mole**
Color:	**Off-white.**
pH (1% soln/water):	**Not applicable.**
Boiling Point:	**390°C (734°F)**
Melting Point:	**88°C (190.4°F) - 91 C**

Section 9: Physical and Chemical Properties (Continued)

Critical Temperature: Not available.
Specific Gravity: Not available.
Vapor Pressure: Not applicable.
Vapor Density: 8.77 (Air = 1)
Volatility: Not available.
Odor Threshold: Not available.
Water/Oil Dist. Coeff.: Not available.
Ionicity (in Water): Not available.
Dispersion Properties: See solubility in water, diethyl ether.
Solubility: Soluble in diethyl ether. Insoluble in cold water, hot water. Soluble in benzene, carbon disulfide, acids. Slightly soluble in cold alcohol. More soluble in hot alcohol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, dust generation, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, acids.

Corrosivity: Not available.

Special Remarks on Reactivity: Incompatible with acid anhydrides, acid chlorides

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: **Inhalation. Ingestion.**

Toxicity to Animals: **Acute oral toxicity (LD50): 3160 mg/kg [Mouse].**

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 2 (Some evidence.) by NTP. 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: blood, liver, thyroid.

Other Toxic Effects on Humans: **Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant).**

Special Remarks on Toxicity to Animals: **Not available.**

Special Remarks on Chronic Effects on Humans: **May cause cancer. May affect genetic material (mutagenic).**

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation. Eyes: Causes eye irritation. Inhalation: Causes respiratory tract irritation. Ingestion: Causes gastrointestinal tract irritation with nausea, vomiting, and diarrhea, collicky pain. Since this substance is an aniline, exposure inhalation and ingestion may cause Methemoglobinemia. It is characterized by nausea, vomiting, dyspnea (difficulty breathing), central nervous system depression and nervous system effects (headache, confusion, faintness, dizziness, disorientation, weakness, loss of coordination, lethargy, fatigue, tremor, spasticity, convulsions, loss of conciousness, coma), muscle pain, cardiac arrhythmias, heart block. Cyanosis may also occur after exposure. The lips, tongue, and mucous membranes may turn navy blue to black and the skin slate gray. Death may occur due respiratory paralysis or cardiovasular collapse. A Heinz-body hemolytic crisis may follow the development of Methemoglobinemia. Chronic Potential Health Effects: Toxic effects with chronic exposure may resemble those of acute exposure.

Section 12: Ecological Information

Ecotoxicity: **Not available.**
BOD5 and COD: **Not available.**

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Section 12: Ecological Information (Continued)

Toxicity of the Products of Biodegradation: **The products of degradation are less toxic than the product itself.**

Special Remarks on the Products of Biodegradation: **Not available.**

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

Land transport (ADR-RID)
General Information: Not Regulated

Sea transport (IMDG) [English only]
General Information: Not Regulated

Air transport (ICAO-IATA) [English only]
General Information: Not Regulated

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: 4,4- Bis(dimethylamino)diphenylmethane California prop. 65 (no significant risk level): 4,4-Bis(dimethylamino)diphenylmethane: 0.02 mg/day (value) California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: 4,4-Bis(dimethylamino)diphenylmethane Illinois toxic substances disclosure to employee act: 4,4-Bis(dimethylamino)diphenylmethane Pennsylvania RTK: 4,4-Bis(dimethylamino)diphenylmethane Minnesota: 4,4-Bis(dimethylamino)diphenylmethane Massachusetts RTK: 4,4-Bis(dimethylamino)diphenylmethane New Jersey: 4,4-Bis(dimethylamino)diphenylmethane New

Section 15: Other Regulatory Information (Continued)

Jersey spill list: 4,4-Bis(dimethylamino)diphenylmethane California Director's List of Hazardous Substances: 4,4-Bis(dimethylamino)diphenylmethane TSCA 8(b) inventory: 4,4-Bis(dimethylamino)diphenylmethane SARA 313 toxic chemical notification and release reporting: 4,4-Bis(dimethylamino)diphenylmethane

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):

R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R45- May cause cancer. R46- May cause heritable genetic damage. S22- Do not breathe dust. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. 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.

HMIS (U.S.A.):

Health Hazard: 2
Fire Hazard: 1
Reactivity: 0
Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2
Flammability: 1
Reactivity: 0
Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

Section 16 - Additional Information

References: Not available.

Other Special Considerations: Not available.

Disclaimer:

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