

## N,N'-Diphenylbenzidine 531-91-9 MSDS

**Section 1 - Chemical Product** MSDS Name:N N'-Diphenylbenzidine 97% Material Safety Data Sheet  
Synonym:None

### Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content
531-91-9	1, 1'-Biphenyl-4, 4'-Diamine, n, n'-Diphe	97

Hazard Symbols: None Listed.

Risk Phrases: None Listed.

### Section 3 - HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Light sensitive.The toxicological properties of this material have not been fully investigated.

Potential Health Effects

Eye:

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

May cause gastrointestinal irritation with nausea, vomiting and diarrhea. The toxicological properties of this substance have not been fully investigated.

Inhalation:

May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.

Chronic:

No information found.

### Section 4 - FIRST AID MEASURES

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:

Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting.

If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration.

If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

## **Section 5 - FIRE FIGHTING MEASURES**

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

## **Section 6 - ACCIDENTAL RELEASE MEASURES**

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Provide ventilation.

## **Section 7 - HANDLING and STORAGE**

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed.

Avoid ingestion and inhalation.

Storage:

Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## **Section 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

Exposure Limits CAS# 531-91-9: United States OSHA: (Cancer suspect agent - see 29 CFR 1910.1010) (listed under Benzidine).

France - VME: (listed as benzidine): 0.001 ppm VME; 0.008 mg/m<sup>3</sup> V Germany: (listed as benzidine): 0.001 ppm VME; 0.008 mg/m<sup>3</sup> VME Personal Protective Equipment Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## **Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

Physical State: Solid

Color: gray to brown

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 246.00 - 248.00 deg C

Autoignition Temperature: Not available.

Flash Point: Not available.

Explosion Limits, lower: N/A

Explosion Limits, upper: N/A

Decomposition Temperature:

Solubility in water:

Specific Gravity/Density:

Molecular Formula: C<sub>24</sub>H<sub>20</sub>N<sub>2</sub>

Molecular Weight: 336.42

## **Section 10 - STABILITY AND REACTIVITY**

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, dust generation, excess heat, strong oxidants.

Incompatibilities with Other Materials:

Oxidizing agents.

Hazardous Decomposition Products:

Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.

Hazardous Polymerization: Has not been reported

## **Section 11 - TOXICOLOGICAL INFORMATION**

RTECS#:

CAS# 531-91-9 unlisted.

LD50/LC50:

Not available.

Carcinogenicity:

1,1'-Biphenyl-4,4'-Diamine, n,n'-Diphenyl- - California: carcinogen, initial date 2/27/87 (listed as Benzidine).

NTP: Known carcinogen (listed as Benzidine).

IARC: Group 1 carcinogen (listed as Benzidine).

## **Section 12 - ECOLOGICAL INFORMATION**

## **Section 13 - DISPOSAL CONSIDERATIONS**

Dispose of in a manner consistent with federal, state, and local regulations.

## **Section 14 - TRANSPORT INFORMATION**

IATA

Shipping Name: Not regulated.

Hazard Class:

UN Number:

Packing Group:

IMO

Shipping Name: Not regulated.

Hazard Class:

UN Number:

Packing Group:

RID/ADR

Shipping Name: Not regulated.

Hazard Class:

UN Number:

Packing group:

## **Section 15 - REGULATORY INFORMATION**

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases:

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

S 28A After contact with skin, wash immediately with plenty of water.

S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 531-91-9: No information available.

Canada

CAS# 531-91-9 is listed on Canada's NDSL List.

CAS# 531-91-9 is not listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 531-91-9 is listed on the TSCA inventory.

**SECTION 16 - ADDITIONAL INFORMATION**

N/A