Material Safety Data Sheet

Section 1 - Chemical Product and Company Identification

MSDS Name:	N,N'-Diphenyl-p-phenylenediamine
Synonyms:	*N,N'*-Diphenyl-1,4-phenylenediamine
Company Identification:	PI Chemicals Ltd. Room 6-306, Building 2 1341 Pudong South Road Pudong New Area, Shanghai 200212, China
Telephone Number:	86-21-51389368
Fax Number:	86-21-51389367
Emergency Number:	86-21-51389369

Section 2 - Product Information

Catalog Number:	PI-30897
CAS Number:	74-31-7
MDL Number:	MFCD00003015
EC Number:	200-806-4
Purity:	98.0%min

Section 3 - Physical and Chemical Properties

Physical state:	Powder
Color:	Gray
Odor:	Not available
Molecular Formula:	$C_{18}H_{16}N_2$
Molecular Weight:	260.33
Freezing/Melting Point:	134-146 deg C
Boiling Point:	220-225 deg C (0.5mmHg)
Flash Point:	Not available
Autoignition Temperature:	Not available
Refractive Index (nD20):	Not available
Density:	1.28g/ml
Decomposition Temperature:	Not available
Solubility:	Insoluble in water; Soluble in DMF, acetone, ethyl acetate.

Section 4 - Hazards Identification

Eye: Causes eye irritation.

Skin: Causes skin irritation. Harmful if absorbed through the skin.
Ingestion: May cause irritation of the digestive tract. Toxic if swallowed.
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Section 5 - First Aid Measures

Eye: 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 and soap for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops and persists.
Ingestion: Get medical aid immediately. Wash mouth out with 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.

Section 6 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Materials to avoid: Strong oxidizing agents.
Conditions to Avoid: Incompatible materials.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, nitrogen oxides.
Hazardous Polymerization: Will not occur.

Section 7 - Handling and Storage

Handling: Avoid breathing dust, vapor, mist, or gas. Keep container tightly closed. Avoid contact with skin and eyes. Wash thoroughly after handling. Mechanical exhaust required.
Storage: Store in a cool, dry well ventilated place away from sources of heat and incompatible substances. Keep container tightly closed when not in use.

Section 8 - Personal Protection

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 prevent skin exposure.
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 - Fire and Explosion Hazard Data

General Information: As in any fire, wear a self-contained breathing apparatus, MSHA/NIOSH

(approved or equivalent) and protective clothing to prevent contact with skin and eyes.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Section 10 - Accidental Release Measures

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

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container.

Section 11 - Toxicological Information

RTECS#: CAS#74-31-7: ST2275000

LD50/LC50: RTECS:

CAS# 74-31-7: Draize test, rabbit, eye: 500 mg/24H Mild;

Oral, mouse: LD50 = 18 gm/kg;

Oral, rat: LD50 = 2370 mg/kg;.

Carcinogenicity: N,N'-Diphenyl-p-phenylenediamine - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Section 12 - Environmental information

Harmful to fish.

Section 13 - Disposal Consideration

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations.

Section 14 - Transport Information

IATA: This substance is considered to be non-hazardous for transport.

IMO: This substance is considered to be non-hazardous for transport.

RID/ADR: This substance is considered to be non-hazardous for transport.

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Indication of Danger: Toxic

Risk Phrases:

R 45: May cause cancer.

R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 24/25: Avoid contact with skin and eyes.

S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37: Wear suitable gloves.

S 61: Avoid release to the environment. Refer to special instructions safety data sheet.

WGK (Water Danger/Protection)

CAS#74-31-7: 2

Canada

CAS# 74-31-7 is listed on Canada's DSL List

US Federal

TSCA

CAS# 74-31-7 is listed on the TSCA Inventory.

Section 16 - Additional Information

MSDS Creation Date:	March 25, 2006
Update:	December 5, 2007

The above information is believed to be accurate and represents the best knowledge available to us currently. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall PI Chemicals, be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, even if PI Chemicals has been advised of the possibility of such damages.