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MATERIAL SAFETY DATA SHEET

FOR 6PPD

Product Name: 6PPD

Chemical Name: 4020, N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine

Synonyms: Santoflex 13; Permanax 6PPD; 1,4-Benzenediamine, N(1,3-dimethylbutyl)-N'-phenyl-

1. COMPOSITION/INFORMATION ON INGREDIENTS

Components/CAS#	Percent
N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine 793-24-8	95-99

2. HAZARDS IDENTIFICATION

Emergency Overview: WARNING! May irritate the eyes. May irritate the skin. Avoid breathing dust. May irritate the lungs.

Eye Contact: Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing. May irritate eyes.

Skin Contact: May cause an allergic skin reaction. Skin contact with molten material may result in a thermal burn. Mild Skin Irritation (after prolonged or repeated contact): sign/symptoms can include redness, swelling, and itching.

Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

Ingestion: Illness may occur after a single swallowing of relatively large quantities of this material.

3. FIRST AID MEASURES

In Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

On Skin: Wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy or properly dispose of contaminated shoes. If irritation persists or signs of toxicity occur, seek medical attention

Inhaled: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention. If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Swallowed: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration. Never give fluids or induce

vomiting if the victim is unconscious or having convulsions.

Notes To Physician: Treat symptomatically.

4. FIRE FIGHTING MEASURES

Flash Point (°F/C): 400°F / 204°C

Flash Point Method: Cleveland Open Cup

Autoignition Temp. (°F/C): Not determined.

Lower Explosion Limit in Air (LEL): Not determined.

Upper Explosion Limit in Air (UEL): Not determined.

Extinguishing Media: Water fog, carbon dioxide, foam, dry chemical

Special Exposure Hazards: Fight fire from a safe distance and from a protected location. Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways.

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment:

Unusual Fire/Explosion Hazards: Toxic emissions may result if product is involved in a fire.

5. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Wear impervious personal protective equipment to protect eyes, skin and clothing. If material is in the liquid state, absorb liquid with inert materials. Scoop, sweep or shovel solids and place in a closed container for proper disposal.

Procedure for Cleaning/Absorption: Isolate spill and stop leak where safe. Contain liquid spills with sand or other inert materials. Scoop up and remove solids. Do NOT spread spilled product with water. Spilled material may stain and discolor surfaces.

CERCLA Reportable Quantity (RQ): Not Applicable.

6. HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Keep away from food and smoking materials. Good hygienic practices should be observed. Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded with material. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Do not reuse this container. Storage at temperatures above 90 F for an extended period of time should be avoided. Reclose containers of unused product. Keep containers tightly closed when not in use.

Storage: Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials. Avoid exposure to direct sunlight.

7. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses or goggles to protect against exposure. Wear eye protection appropriate to handling activities. Employees should wear appropriate protective (impervious) clothing and gloves when contact with material.

Skin Protection: Normal work coveralls. Launder contaminated clothing before reuse.

Gloves: Use gloves as a standard industrial handling procedure. Appropriate chemical resistant gloves should be worn.

Respiratory Protection: Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure.

Ventilation: General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits during the use of this product. Adequate ventilation should be provided to keep dust

concentrations below acceptable exposure limits. Discharge from the ventilation system should comply with the applicable air pollution control regulations. Eliminate ignition sources. Use local exhaust to control to recommended P.E.L.

Airborne Exposure Limits: Nuisance Dust. OSHA PEL/8Hr-TWA = 15 mg/m³ (Total Dust). OSHA PEL/8-Hr TWA = 05 mg/m³ (Respirable Dust). ACGIH TLV/8-Hr TWA = 10 mg/m³.

8. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light pink to purple pastilles. Purple liquid above melt point.

Odor: AROMATIC

pH: Not Applicable.

Specific Gravity: 1.0 @ 60°C

Density: 0.986 - 1.000

Bulk Density: Not Determined

Melting Point (°F/C): 115-124°F / 46-51°C

Boiling Point (°F/C): 441°F / 227°C @ 4Torr

Vapor Pressure: 0.064 Torr @ 162°C, 0.250 Torr @ 180°C, 1.0 Torr @ 200°C, 4.0 Torr @ 227°C

Vapor Density (Air=1): Not Determined

% Volatile by Volume: <0.5%

Solubility in Water: INSOLUBLE 1.1 ppm @ 23°C

Other Solubility: Soluble in Acetone Ethanol Benzene Naphtha

Viscosity: 135-170 SUS @ 60°C; 27-38 cSt @ 60°C

Other Data: Crystallizing Point: 111°F / 44°C. Ash = 0.1% max.

Molecular Weight: 268.4

Molecular Formula: C₁₈-H₂₄-N₂

9. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of handling, use and transportation. Stable if protected from heat and exposure to air.

Hazardous Polymerization: Will not occur

Conditions to Avoid: Temperatures above 300°C. Avoid contact with strong oxidants such as liquid chlorine and concentrated oxygen. Air.

Materials to Avoid: Strong oxidizers

Hazardous Decomposition Products: Oxides of nitrogen. Carbon monoxide.

Additional Guidelines: Not Applicable

10. TOXICOLOGICAL INFORMATION

Target Organs

Acute Oral LD50 (mg/kg): 3580 mg/kg (Rat)

Acute Dermal LD50 (mg/kg): >7940 mg/kg (Rabbit)

Acute Inhalation LC50 (mg/l): Not determined

Principle Routes of Exposure: Dermal - skin. Inhalation.

Ingestion: Illness may occur after a single swallowing of relatively large quantities of this material.

Skin Contact: May cause an allergic skin reaction. Skin contact with molten material may result in a thermal burn. Mild Skin Irritation (after prolonged or repeated contact): sign/symptoms can include redness, swelling, and itching.

Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

Eye Contact: Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing. May

irritate eyes.

Aggravated Conditions: Dermal ailments. Blood disorders. This material or its emissions may cause an allergic or sensitization reaction and thereby aggravate systemic disease. Liver disorders.

Carcinogenicity Comment: This product or one of its ingredients present 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA. Carcinogenic: Category 3

Other: Decomposition products and fumes from vulcanization and cross-linking may cause eye, skin and respiratory sensitization. May be a skin sensitizer.

Primary Irritation Effect: Slightly irritating

Carcinogenicity: Negative in standard tests using bacteria and yeast cells. Negative in standard tests using animal cells.

Genotoxicity: Negative for genetic activity - in vitro tests. Negative for genetic activity - in vivo tests.

Reproductive/Developmental Toxicity:

Did not affect reproductive performance or post-natal development in animal studies. No evidence of teratogenicity in animal studies using rats, mice and/or hamsters.

11. ECOLOGICAL INFORMATION

Acute Fish Toxicity: 96Hr LC50 Rainbow Trout 0.13 mg/l 96Hr LC50 Bluegill Sunfish 0.13 mg/l 96Hr LC50 Fathead Minnow 0.45 mg/l

Acute Crustaceans Toxicity: 48Hr EC50 Daphnia Magna 0.82 mg/l

Acute Algae Toxicity: 96Hr EC50 Algae (Cell Number) 0.60 mg/l

Octanol/Water Coefficient: 59000 +/- 34000 (Calculated). Log P = 4.68.

Chemical Fate Information: Bioconcentration Factor = 490 (calculated)

Other Information: Aerobic Biodegradation: 50% after 2.9 hours. Rapid degradation via hydrolysis: 93% after 24 hours at pH 7.0 and 25°C. Tests indicate this material will not bioaccumulate or persist in the environment.

12. DISPOSAL CONSIDERATIONS

Disposal of Waste Method:

This product is not regarded as hazardous waste. Dispose in accordance with local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations.

Contaminated Packaging:

If empty container retains product residues, all label precautions must be observed. Transport with all closures in place. Return for reuse or dispose according to national or local regulations. Do NOT reuse container.

13. TRANSPORT INFORMATION

DOT Shipping Name: NONE

DOT Reportable Quantity (lbs): None

ICAO/IATA:Status: NONE

Proper Shipping Name: None

UN/NA Number: NONE

IMDG:Status: Not Regulated

Proper Shipping Name: None

TDG (Canada):Status: Not Regulated.

Proper Shipping Name: None

14. REGULATORY INFORMATION**Worldwide Inventory Status****TSCA (USA):** Listed**Canadian DSL:** Listed**Canadian NDSL:** N/A**EINECS/ELINCS (Europe):** Listed**Japanese Inventory (ENCS):** Listed**Korean Chemical Inventory (ECL):** Listed**Australian Chemical Inventories****(AICS):** Listed**New Zealand (NZ):** Listed**Phillipines (PICCS) Inventory:** Listed**China (CLECS):** Listed**US Regulatory Rules****SARA Section 302:** Not Applicable / None**SARA 311/312 Hazard Categories:** Immediate**SARA 313 Chemical:** Not Applicable / None**RCRA Status:** Not a RCRA waste.

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