Safety Data Sheet (SDS)

Revision 1 / Review Date: 03/20/2020

1. Chemical Product and Company Identification

Product Name:	6PPD
Distributed By:	HB Chemical 1665 Enterprise Parkway Twinsburg Oh 44087 Phone - 330-920-8023
MSDS Prepared By (w Suppliers Input):	HB Chemical
Chemical Name / Family:	Antioxidant
CAS No.	793-24-8
Product Use:	Antioxidant for tire, belt, insulated wire.
OSHA Status	Not Hazardous

For emergency health, safety, and environmental information, calls 330-920-8023
For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300

2. Hazard(s) Identification

GHS Classification

Acute toxicity (Oral):	Category 4
Skin sensitisation:	Category 1

GHS Label element
Hazard pictograms

Signal word :	Warning
Hazard statements :	H302 Harmful if swallowed. H317 May cause an allergic skin reaction.
Prevention:	P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves.

Response:	P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P363 Wash contaminated clothing before reuse.
Disposal:	P501 Dispose of contents/ container to an approved waste Disposal plant.
Warning:	May produce an allergic reaction.
Signs and Symptoms of Exposure:	May cause skin irritation and or dermatitis. May cause eye irritation Harmful if swallowed.
Potential health effects:	Acute toxicity
Eye Contact:	May cause eye irritation. Symptoms include swelling and redness .
Skin Contact:	May be harmful in contact with skin. Repeated or prolonged skin contact may cause allergic reaction with susceptible persons.
Ingestion:	Harmful if swallowed.
Inhalation:	May be harmful if inhaled.
Chronic effects:	repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.
Main symptoms:	Pain, redness swelling of skin or eyes.
Aggravated Medical Conditions:	Allergies. Skin disorders. Respiratory disorders.
Interactions with other Chemicals:	Irritants. Sensitizers. Epoxies.
Environmental hazard:	Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment. See section 12 for additional Ecological information.

3. Composition / Information on Ingredients

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
N-(1,3-Dimethylbutyl)-N'-phenyl-1,4-phenylendiamine	N-(1,3-dimethylbutyl)-N\'-phenyl-p-phenylenediamine	793-24-8	98.5
p-Aminodi- phenylamine	Not available	101-54-2	0.1-<1
N-(1-Methylethyl)-N'-phenyl-1,4-benzenediamine	N-Isopropyl-N\'-phenyl-1,4-phenylenediamine	101-72-4	0.1-<1
N-Phenylbenzenamine	Benzenamine, N-phenyl-	122-39-4	0.1-<1

4. First Aid Measures

General advise:	When symptoms persist or in all cases of doubt seek medical advice. If unconscious place in recovery position and get medical attention immediately. Show this SDS to the doctor in attendance.
Inhalation:	Remove to fresh air. If not breathing five artificial respiration. If breathing is difficult, give oxygen. Call a physician. Keep victim warm and quiet. Loosen tight clothing such as a collar, tie, belt or waistband. Maintain an open airway. Persons who have inhaled vapors or smoke fumes have to be put under medical observation for least 48 hours due to the delayed appearance of poisoning.
Eyes:	Do not rub your eyes. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if symptoms occur.
Skin:	Wash off immediately with soap and plenty of water. Remove contaminated clothing and shows. In the case of ski irritation or allergic reactions see a physician. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse.
Ingestion:	If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep victim warm and quiet. Loosen tight clothing such as a collar, tie, belt or waistband. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. DO NOT induce vomiting unless directed to do so by a physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Maintain an open airway. If not breathing, give oxygen. Call a physician immediately.
Notes to physician:	Treat symptomatically. Persons who have inhaled vapors or smoke fumes have to be put under medical observation for at least 48 hours, due to delayed appearance of poisoning.

5. Fire-Fighting Measures

Flammable properties:	Not flammable.
Flash point/method:	202 °C / 396° F / Closed cup
Suitable Extinguishing Media:	Water Spray. Foam. Dry powder. Carbon dioxide (CO_2)

Special Fire Fighting Procedures:	As in any fire, wear self-contained breathing apparatus and full protective gear.
Explosion Data:	Sensitivity to Mechanical impact; None. Sensitivity to static discharge; None.
Specific hazards arising from the chemical:	Thermal decomposition can lead to release of irritating gases and vapors. In the event of the fire and/or explosion do not breath fumes. May cause sensitization by inhalation and skin contact.

6. Accidental Release Measures

Personal precautions:	No action shall be taken involving any personal risk or without suitable training. Do not touch or walk through spilled material. Avoid contact with skin, eye and clothing. Wear personal protective equipment.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Clean up spill immediately. Prevent product and washing from entering drains, sewers or surface water due to high toxicity to aquatic organisms. Local authorities should be advised if significant spillages cannot be contained.
Methods for containment:	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up:	Wear impervious personal protective equipment to protect eyes, skin and clothing. If material is in the liquid state, absorb liquid with inert material. Scoop, sweep or shovel solids and place in a closed container for proper disposal. Isolate spill and stop leak where safe. Do NOT spread spilled product with waters. Spilled material may stain and discolor surfaces. Reclaim or dispose of in accordance with local, state, and federal regulations

7. Handling and Storage:

Advice on safe handling:	Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.
Technical measures/Storage Conditions:	Keep containers tightly closed in a dry , cool and well-ventilated place. Keep away from direct sunlight. Keep away from contact with oxidizing materials. Keep in properly labeled containers.

Use appropriate containment to avoid environmental

contamination. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store in accordance with local regulations.

8. Exposure Controls / Personal Protection

Exposure Guidelines:

Exposure Limits	ACGIH TLV	OSHA PEL
N-(1,3-Dimethylbutyl)-N´-phenyl-p-phenylenediamine	3 mg/m^3 (1) 10 mg/m^3 (3)	5 mg/m^3 (1) 15 mg/m^3 (3)

Engineering measures: Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Apply technical measures to comply with the occupational exposure limits. If this product contains ingredients with exposure limits, personal, workplace atmosphere of biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to us respiratory protective equipment.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Protective Gloves: Impervious gloves

Eye Protection: Safety glasses with side-shields.

Skin and Body Protection: Lightweight protective clothing.

Hygiene measures: When using do not eat, drink or smoke. Remove and wash contaminated clothing before re-use.

Carcinogenicity: 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.

Genotoxicity: Both negative and weak positive results in standard in vitro and in vivo tests using mammalian cells.

Reproductive /Developmental Toxicity: No evidence of teratogenicity in animal studies using rats, mice and or hamsters.

9. Physical and Chemical Properties

A. Appearance	
- Appearance	Solid
- Color	Dark brown.
B. Odor	Not available
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	49℃
F. Initial Boiling Point/Boiling Ranges	163~165℃ (1.33 hPa)
G. Flash point	202℃ (1013 hPa. ℃ PMCC(Pensky-Martens closed cup))
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	0.00066 Pa (25°C)
L. Solubility	0.0001 g/l (50°C) Slightly soluble in water. Hydrocarbons.
M. Vapour density	Not available
N. Specific gravity(Relative density)	0.995 g/cm³ (50°C)
O. Partition coefficient of n-octanol/water	log Pow: 4.68
P. Autoignition temperature	~500°C Powder.
Q. Decomposition temperature	Not available
R. Viscosity	27-38 mPa s (60°C)
S. Molecular weight	268.4

10. Stability and Reactivity

Stability:	Stable under recommended storage and handling conditions (see section 7)
Incompatibility (Materials to Avoid):	Strong oxidizing agents
Conditions to Avoid:	Temperatures, above 200°C / 392°F
Hazardous decomposing products:	None known based on information supplied.
Hazardous Polymerization:	Hazardous polymerization does not occur

11. Toxicological Information

Product Information:	LD50 dermal: See table below
Inhalation:	May be harmful if inhaled.
Eyes:	May cause irritation.
Skin:	May be harmful in contact with skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible

A. Information on the likely routes of exposure

○ **(Respiratory tracts)**

- Not available

○ **(Oral)**

- Harmful if swallowed

○ **(Eye·Skin)**

- May cause an allergic skin reaction

B. Delayed and immediate effects and also chronic effects from short and long term exposure

○ **Acute toxicity**

*** Oral**

- Product (ATEmix) : 300mg/kg < ATEmix <= 2000mg/kg
- [N-(1,3-Dimethylbutyl)-N′-phenyl-1,4-phenylendiamine] : LD50 893 ㎎/㎏ Rat Female / 1005 ㎎/㎏ Rat Male (OECD Guideline 401, Acute Oral Toxicity, GLP)
- [p-Aminodi- phenylamine] : LD50 1000 ㎎/㎏ Rat (IUCLID)
- [N-(1-Methylethyl)-N′-phenyl-1,4-benzenediamine] : LD50 555 ㎎/㎏ Rat
- [N-Phenylbenzenamine] : LD50 1120 ㎎/㎏ Rat

*** Dermal**

- Product (ATEmix) : >5000mg/kg
- [N-(1,3-Dimethylbutyl)-N′-phenyl-1,4-phenylendiamine] : LD50 >7940 ㎎/㎏ Rabbit (ECHA)
- [p-Aminodi- phenylamine] : LD50 > 5000 ㎎/㎏ Rabbit (IUCLID)
- [N-(1-Methylethyl)-N′-phenyl-1,4-benzenediamine] : LD50 7500 ㎎/㎏ Rabbit
- [N-Phenylbenzenamine] : LD50 2000 ㎎/㎏ Rabbit

*** Inhalation**

- Product (ATEmix) : Not classified

○ **Skin corrosion/irritation**

- Not available

○ **Serious eye damage/irritation**

- Not available

○ **Respiratory sensitization**

- Not available

○ **Skin sensitization**

- May cause an allergic skin reaction

○ **Carcinogenicity**

*** IARC**

- Not available

*** OSHA**

- Not available

*** ACGIH**

- [N-Phenylbenzenamine] : A4

*** NTP**

- Not available

*** EU CLP**

- Not available

○ **Germ cell mutagenicity**

- Not available

12. Ecological Information

A. Ecotoxicity

○ **Fish**

- [N-(1,3-Dimethylbutyl)-N′-phenyl-1,4-phenylendiamine] : LC50 0.028 ㎎/ℓ 96 hr Oryzias latipes (OECD Guideline 203, GLP)
- [p-Aminodi- phenylamine] : LC50 75.233 ㎎/ℓ 96 hr (Estimate)
- [N-Phenylbenzenamine] : LC50 3.79 ㎎/ℓ 96 hr

○ **Crustaceans**

- [N-(1,3-Dimethylbutyl)-N′-phenyl-1,4-phenylendiamine] : EC50 0.23 ㎎/ℓ 48 hr Daphnia magna (OECD Guideline 202, GLP)
- [p-Aminodi- phenylamine] : EC50 0.370 ㎎/ℓ 48 hr Daphnia magna (ECOTOX)

○ **Algae**

- [N-(1,3-Dimethylbutyl)-N′-phenyl-1,4-phenylendiamine] : ErC50 2.6 ㎎/ℓ 72 hr Other(Desmodesmus subspicatus, OECD Guideline 201, EU Method C.3, GLP, ECHA, Read-across 122-37-2; 4-(anilino)phenol-diamine)
- [p-Aminodi- phenylamine] : EC50 2.4 ㎎/ℓ 72 hr
- [N-Phenylbenzenamine] : ErC50 0.36 ㎎/ℓ 72 hr (NITE)

B. Persistence and degradability

○ **Persistence**

- [N-(1,3-Dimethylbutyl)-N′-phenyl-1,4-phenylendiamine] : Log Kow 5.4 (ICSC)
- [p-Aminodi- phenylamine] : log Kow 1.82 (Estimate)

○ **Degradability**

- Not available

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [p-Aminodi- phenylamine] : BCF 5
- [N-(1-Methylethyl)-N'-phenyl-1,4-benzenediamine] : BCF 170
- [N-Phenylbenzenamine] : BCF 253 (NITE)

○ **Biodegration**

- [N-(1,3-Dimethylbutyl)-N′-phenyl-1,4-phenylendiamine] : 2 % 28 day (not readily biodegradable, OECD TG301C, GLP)
- [N-(1-Methylethyl)-N'-phenyl-1,4-benzenediamine] : BOD degradability: 2.2% (NITE)
- [N-Phenylbenzenamine] : BOD: 0% (NITE)

D. Mobility in soil

- [p-Aminodi- phenylamine] : Koc 486.41

E. Other adverse effects

- Not available

13. Disposal Considerations

Waste disposal methods:	Since more than two kinds of designated waste is mixed m it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process. If water separation is possible, pre-process with Water separation process. Dispose by incineration. Do disposal as neutralization hydrolysis and oxidation reduction. High temperature incinerating high temperature melt processing will be landfilled. Solidification processing. Dispose of in accordance with federal, local, regulation.
Special precautions for disposal:	The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.

14. Transport Information

DOT Not regulated
Note Not listed as a hazardous material per 49 CFR 172.101

A. UN No. (IMDG CODE/IATA DGR)

- 3077

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. Regulatory Information

A. National and/or international regulatory information

- **POPs Management Law**
  - Not applicable
- **Information of EU Classification**
  - *** Classification**
    - [N-(1-Methylethyl)-N'-phenyl-1,4-benzenediamine] : H302, H317, H410
    - [N-Phenylbenzenamine] : H331, H311, H301, H373, H410
- **U.S. Federal regulations**
  - *** OSHA PROCESS SAFETY (29CFR1910.119)**
    - Not applicable
  - *** CERCLA Section 103 (40CFR302.4)**
    - Not applicable
  - *** EPCRA Section 302 (40CFR355.30)**
    - Not applicable
  - *** EPCRA Section 304 (40CFR355.40)**
    - Not applicable
  - *** EPCRA Section 313 (40CFR372.65)**
    - [N-Phenylbenzenamine] : Applicable
- **Rotterdam Convention listed ingredients**
  - Not applicable
- **Stockholm Convention listed ingredients**
  - Not applicable
- **Montreal Protocol listed ingredients**
  - Not applicable

TSCA	Listed
Canadian DSL	Listed
EINECS/ELINCS	Listed

US Regulations

SARA Section 302	None
SARA 311/312 Hazard Categories	Immediate
SARA 313 Chemical	None
RCRA Status	Not a RCRA waste

16. Other Information

NFPA Rating Health 2 Fire 1 Reactivity 0

NMIS Classification Health 2 Fire 1 Reactivity 0

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the users responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended.