

1. IDENTIFICATION

Trade Name	PANA
Substance Name	N-Phenyl-1-naphthylamine
CAS Number	90-30-2
Usage	Industrial intermediates for the synthesis of organic chemicals
Manufacturer	Nation Ford Chemical Company 2300 Banks St Fort Mill, SC 29715 United States of America
Email	info@nationfordchem.com
Telephone	1-803-548-3210
Emergency Telephone Number	1-800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

Hazard Classification
Classification in accordance with 29 CFR 1910.1200

Acute Toxicity	Category 4	H302
Skin Irritant	Category 1B	H317
Specific Target Organ Toxicity – Repeat Exposure	Category 2	H373

Label Elements



Hazard Pictograms
Signal Word

Warning

Hazard Statements
H302
H317

Harmful if swallowed
May cause an allergic skin reaction

H373

May cause damage to blood system through prolonged or repeated exposure

Precautionary Statements

P260	Do not breath dust
P264	Wash skin thoroughly after handling
P273	Avoid release to the environment.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water
P313 + P333	If skin irritation or rash occurs: Get medical attention.
P314	Get medical advice if you feel unwell.
P391	Collect Spillage.
P501	Dispose of contents in accordance with local regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance Name	N-Phenyl-1-naphthylamine
CAS Number	90-30-2
Purity	100%
Synonyms	PANA PhenylNaphthylamine

4. FIRST AID MEASURES

General information	Immediately remove any clothing soiled by the product. Provide oxygen treatment if affected person has difficulty breathing. Take affected persons out into the fresh air.
Inhalation	If large amounts are inhaled, remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, administer oxygen and call a physician.
Skin contact	Immediately wash skin with soap and water while removing contaminated clothing. Wash contaminated clothing before reuse. Get medical attention if irritation or rash occurs.
Eye contact	Immediately flush eyes with water for several minutes. Assure adequate flushing by separating eyelids with fingers. Seek medical attention if irritation occurs.
Ingestion	Do not induce vomiting. Immediate vigorous rinsing of the mouth. Drink water in small sips (dilution effect). If unconscious place in recovery position and seek immediate medical attention. Maintain an open airway. Loosen tight clothing (such as a collar, tie, belt or waistband).
Most important symptoms and effects, both acute and delayed	May cause eye and skin irritation. May cause allergic skin reaction (sensitization). May be harmful if swallowed. Prolonged or repeated contact may cause damage to the blood system.
Indication of any immediate medical attention and special treatment needed	Immediate medical attention should not be necessary. Symptomatic treatment and if possible, contact poison specialist.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Carbon Dioxide (CO ₂), Powder, Water Spray, Fight larger fires with water spray or alcohol resistant foam.
Unsuitable extinguishing media	Water with full jet
Specific hazards arising from the chemical	Do not allow run-off from firefighting to enter drains or water courses.
Special protective equipment and precautions for fire-fighters	Must wear self-contained breathing apparatus.
Additional Information	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures	Use personal protective equipment.
Environmental precautions	Prevent entry into drains, waters or soil. Prevent further leakage or spillage if safe to do so.
Methods and materials for containment and cleaning	Take up avoiding formulation of dust. Fill into labelled, sealable containers.

Reference to other sections See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

7. HANDLING AND STORAGE

Precautions for Safe Handling Provide adequate ventilation and, if necessary, exhaust ventilation during handling or transferring of the product. Avoid contact with skin and eyes. Dispose of rinse water in accordance with local and national regulations. Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for Safe Storage Requirements to be met by Storerooms and receptacles Store in a dry place. Keep away from sources of ignition and strong oxidizing agents. Ensure that containers are clearly and permanently labelled. Store in the original container if possible. Keep container tightly closed.

Information about storage in one common storage facility Do not store together with acids. Store away from foodstuffs. Store away from flammable substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

DNEL Values

Dermal (Long Term Exposure) 0.050 mg/kg bw/day
 Inhalation (Long Term Exposure) 0.18 mg/m³

PNEC Values

PNEC_{aq} (freshwater) 0.0002 mg/L; Assessment factor 100
 PNEC_{aq} (marine water) 0.00002 mg/L; Assessment factor 1000
 PNEC_{aq} (intermittent releases) 0.002 mg/L; Assessment factor 100
 PNEC_{STP} 100 mg/L

Exposure Controls

Personal protective equipment general protective and hygienic measures Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

Ventilation Normal criterion for workplace air changes. A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Respiratory Protection NIOSH/MSHA approved respirator.

Dust - It is recommended to wear respiratory protection such as particle filter P2 or P3.

Vapor – It is recommended to wear respiratory protection such as a full masks with ABEK filter.

Hand Protection Protective gloves. The glove material has to be impermeable and resistant to the substance.

Fabric	Thickness	Breakthrough Time
Natural Latex	1.4 mm	≤ 480 min
Polychloroprene	0.65 mm	≤ 480 min
Nitrile	0.1 mm	≤ 480 min

Eye and Face Protection In cases where there is likelihood of eye contact, wear chemical goggles.

Skin and Body Protection Protective work clothing

Environmental Exposure Do not release into the environment. Dispose of as hazardous waste in accordance with local directives on waste.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color Yellow to tan crystalline flakes or pellets

Form Solid

Odor Pungent odor

Odor threshold No data available

pH Not applicable

Melting/Freezing point 62°C (143.6°F)

Boiling point 363°C (685.4°F) (estimated)

Flash point 202°C (396°F)

Evaporation rate Not applicable

Flammability (solid, gas) Product is classified

Upper explosion limit Not applicable

Lower explosion limit Not applicable

Vapor pressure 0.0011 pa @ 25°C

Density 1.16 g/cm³

Water solubility at 20°C 3 mg/L

Segregation coefficient (n-octanol/water) at 25°C 4.47 log POW (estimated)

Ignition temperature No data available

Decomposition temperature No data available

Self-igniting No data available

Danger of explosion As with most organic compounds, fine dust dispersed in air in the presence of an ignition source is a potential dust explosion hazard.

Dynamic viscosity Not applicable

Kinematic viscosity Not applicable

10. STABILITY AND REACTIVITY

Reactivity	Product is not reactive under normal conditions of storage and use.
Chemical stability	Product is stable under normal conditions of storage and use.
Possibility of hazardous reactions	Can react with acids.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Keep away from reducing agents, oxidizing agents, acids and bases.
Hazardous decomposition products	Thermal decomposition does not occur until flash point is reached. No hazardous decomposition products when stored and handled correctly. Formation of carbon monoxide, carbon dioxide, nitrogen oxides and other toxic gases in the event of a fire or during thermal decomposition.

11. TOXICOLOGICAL INFORMATION

Skin Contact	Irritating to skin.
Long-Term Exposure	No long-term effects have been identified.
Acute Oral Toxicity	LD ₅₀ : 1625 mg/kg bw (rat)
Acute Dermal Toxicity	LD ₅₀ : >5000 mg/kg bw (rabbit)
Acute Inhalation Toxicity	No study performed as exposure is highly unlikely due to low vapor pressure.
Acute Intraperitoneal Toxicity	LD ₅₀ : 219 mg/kg bw (mouse)
Systemic Oral Toxicity	NOAEL: male - 5 mg/kg; female - 25 mg/kg (rat)
Skin Irritation/Corrosion	No adverse effect observed (not irritating)
Eye Irritation/Corrosion	No adverse effect observed (not irritating)
Skin Sensitization	Category 1B using OECD Guideline 406
Germ Cell Mutagenicity in vitro:	No adverse effects observed.
in vivo:	No adverse effects observed.
Carcinogenicity	This product is not classified as a carcinogen by IARC, NPT, OSHA, or the EU CLP.
Reproductive toxicity oral	No adverse effects observed.
STOT: Single Exposure	No information available.
STOT: Repeated Exposure	Product may cause damage to the kidneys through repeated or prolonged exposure.
Aspiration Hazard	No information available
Neurotoxicity	No adverse effects observed.

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to Fish	Fish (low toxicity to fish) LC50: 0.44 mg/L Exposure time: 96 h
Toxicity to Aquatic Invertebrates	Daphnia (harmful to aquatic invertebrates) EC50: 0.3 mg/L Exposure time: 48 h
	Daphnia EC10, LC10: 0.02 mg/L Exposure time: 21 d
Toxicity to Aquatic Algae and Cyanobacteria	Pseudokirchneriella subcapitata EC50: 0.93 mg/L Exposure time: 96 h
Toxicity to Microorganisms	Activated Sludge EC50: > 10,000 mg/L Exposure time: 3 h
Sediment Toxicity	LC50: 2.81 mg/L Exposure time: 48 h
Toxicity to Soil Macroorganisms Except Anthropods	Enchytraeus crypticus NOEC: 220 µmol/kg soil dw Exposure time: 28 d
Toxicity to Terrestrial Anthropods	Folsomia candida NOEC: 88 µmol/kg soil dw Exposure time: 28 d
Persistence and Degradability	Not persistent.
Bioaccumulative Potential	No bioaccumulation potential.
Mobility in Soil	No further relative information available.
Results of PBT and VPVB Assessment	
PBT	Not applicable
vPvB	Not applicable
Other adverse effects	No further relevant information available.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods Must not be disposed together with household garbage. Do not allow product to reach sewage system. Dispose of in accordance with local, regional, national, and international regulations.

14. TRANSPORT INFORMATION

	UN Number	UN Proper Shipping Name	Hazard Class(s)	Packing Group	Environmental Hazards	Other
DOT (Solid)	None	Not Regulated	None	None	Not applicable	None
DOT (Molten)	UN3257	Elevated temperature liquid, n.o.s. at or above 100°C and below its	9	III	Not applicable	None

		flashpoint (Phenyl-1-naphthylamine)				
ADR/RID AND(R)	UN3077	Environmentally hazardous substance, solid, n.o.s. (Phenyl-1-naphthylamine)	9	III	Yes	Classification Code – 90 Labels - 9
IMDG	UN3077	Environmentally hazardous substance, solid, n.o.s. (Phenyl-1-naphthylamine)	9	III	Yes (PP) Marine Pollutant	EmS number – F-A (S_F) MPO: Marine Pollutant Labels - 9
IATA/ICAO	UN3077	Environmentally hazardous substance, solid, n.o.s. (Phenyl-1-naphthylamine)	9	III	Marine Pollutant	Labels - 9

Special Precautions for User Environmentally hazardous substance. Marine pollutants. Keep dry. Avoid heat above +40 °C. Keep separated from foodstuffs.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code Not applicable

15. REGULATORY INFORMATION

CERCLA This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

TSCA All of the components of this product are listed on the TSCA inventory.

Clean Water Act (CWA) This material is not regulated under the CWA.

Clean Air Act (CAA) This material is not regulated under the CAA.

SARA 311/312 Immediate Hazard: Yes
Delayed Hazard: No
Fire Hazard: No
Pressure Hazard: No
Reactivity Hazard: No

SARA 313 This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Proposition 65 This product contains the following substances known to the state of California to cause cancer and/or reproductive toxicity.

Aniline (CAS Number 62-53-3)

International Regulations
Canadian Workplace Hazardous Materials Information System (WHMIS) Not a controlled product.

Canadian Environmental Protection Act All of the components in this product are listed on the Domestic Substances List (DSL). This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the SDS contains all of the information required by the CPR.

European Inventory of Existing Chemicals (EINECS)	All of the components in this product are listed on the EINECS inventory.
German Storage Class (LGK)	13 (Non-flammable solids that cannot be assigned to any of the aforementioned LGK)
Chemical Safety Assessment	A Chemical Safety Assessment has been carried out.

16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Date of Last Revision	December 19, 2023
Further Information	All the information mentioned in this SDS are compliant with the COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
Abbreviations and Acronyms	
EC50	Effective concentration, 50 percent
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
EINECS	European Inventory of Existing Commercial Chemical Substances
CAS	Chemical Abstracts Service (division of the American Chemical Society)
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
Annexes	
Annex A	Exposure Scenarios

Annex 1: Exposure Scenario 1 – Manufacturing

PROCESS	DURATION	RESPIRATORY PROTECTION	FURTHER RISK MANAGEMENT MEASURES
PROC 1: Use in a closed process, no likelihood of exposure	> 4 hours (default)	No	No
PROC 2: Use in a closed, continuous process with occasional controlled exposure	> 4 hours (default)	No	No
PROC 3: Use in a closed batch process (synthesis or formulation)	> 4 hours (default)	No	No
PROC 4: Use in a batch and other process (synthesis) where opportunity for exposure arises	> 4 hours (default)	90%	Gloves: 80% effective
PROC 8A: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	1 – 4 hours	90%	Gloves: 80% effective
PROC 8B: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	> 4 hours (default)	90%	Gloves: 80% effective

Setting – Industrial; Form – Solid; Dustiness – High; Ventilation – Indoor w/o LEV;

Annex 2: Exposure Scenario 2 – Manufacturing of Fine Chemicals

PROCESS	DURATION	RESPIRATORY PROTECTION	FURTHER RISK MANAGEMENT MEASURES
PROC 3: Use in a closed batch process (synthesis or formulation)	> 4 hours (default)	No	No
PROC 4: Use in a batch and other process (synthesis) where opportunity for exposure arises	> 4 hours (default)	No	No
PROC 15: Use of laboratory reagents in small scale laboratories	> 4 hours (default)	No	No

Setting – Industrial; Form – Solid; Dustiness – High; Ventilation – Indoor w/o LEV;

Annex 3: Exposure Scenario 3 – Formulation

PROCESS	DURATION	RESPIRATORY PROTECTION	FURTHER RISK MANAGEMENT MEASURES
PROC 4: Use in a batch and other process (synthesis) where opportunity for exposure arises	> 4 hours (default)	90%	Gloves: 80% effective