
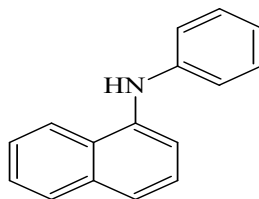
	Document Category <b>Product Specifications</b>	Approved:  Approval : Technical Manager
Prepared By: Jay Dickson Administrative Control: Administrative Controller	Instruction No. <b>PANA</b> <b>SPC-011</b>	Issue No: 6 Issue Date: 12/18/13 Page 1 of 1

## PANA (N-Phenyl-alpha-naphthylamine)

CAS No. 90-30-2



PANA (N-Phenyl-alpha-naphthylamine) is a high-purity product widely used as an antioxidant in petroleum products, synthetic lubricants, rubber products, and as an organic intermediate.

**Petroleum Products:** greases, turbine oils, heat transfer fluids, crankcase lubricants, transformer oils, hydraulic and transmission fluids, and metal working fluids.

**Synthetic Lubricants:** polyglycol fluids and ester-type fluids.

PANA is available as a free-flowing flaked material, a solid in drums, and molten in bulk. The flaked material allows for relatively easy solution of the additive in oil. The solid in drums can be returned to the molten state by heating the drums.

### PHYSICAL PROPERTIES

Molecular Weight.....	219.29
Apparent Specific Gravity at 20/20°C.....	1.2
Melting Point.....	60-62 C (140-144°F)
Freezing Point.....	55 C (131°F)
Solubility	
in petroleum oils.....	Approximately 2% by wt at 25°C (77°F) and at least 0.5% by wt at -15°C (5°F)
in lubricating oils and greases.....	Dissolves readily at temperatures above 57°C (135°F)
Appearance.....	Light tan in color, gradually darkening upon exposure to air and light

### SPECIFICATIONS

Purity, by gas chromatography.....	99.0% by wt minimum (by difference)
alpha-Naphthol.....	0.5% by wt. maximum
Aniline.....	0.19% by wt. maximum
alpha-Naphthylamine.....	0.05% by wt. maximum
beta-Naphthylamine.....	0.005% by wt. maximum
Cyclohexane Insolubles.....	0.25% by wt. maximum
Toluene Insolubles.....	0.25% by wt. maximum
N-Phenyl-beta-Naphthylamine.....	0.50% by wt. maximum
Ash.....	0.05% by wt. maximum
Moisture.....	0.10% by wt. maximum
Color (Solid).....	4 Gardner units, maximum

### SHIPPING DATA *(subject to change)*

Containers and Net Contents	
Cast Solid, 55-gallon steel drum.....	450 lb. net wt
Flaked Product, 55-gallon fiber drum.....	200 lb. net wt
Flaked Product, Bags.....	20 kg. net wt

### STORAGE AND HANDLING

PANA has excellent storage stability. Upon prolonged exposure to air and light, PANA will gradually darken; however, this darkening does not measurably alter the anti-oxidant activity of this material. Containers should be kept covered when not in use. Storage in a clean, dry, shaded area is recommended.