General Populations
- The general population is not likely to be exposed to 1,2-diphenylhydrazine because dye manufacturers in the United States no longer produce benzidine-based dyes, which was the former principal use of 1,2-diphenylhydrazine.
- The populations living near hazardous waste sites where 1,2-diphenylhydrazine is present may be exposed to potentially high levels. However, this is not likely because 1,2-diphenylhydrazine decomposes rapidly.

Occupational Populations
- 1,2-Diphenylhydrazine is used to produce a veterinary medication (phenylbutazone). There is potential for workers involved in the manufacturing of this drug to be exposed to 1,2-diphenylhydrazine.

Toxicokinetics
- 1,2-Diphenylhydrazine is presumed to be absorbed following oral exposure based on the appearance of urinary metabolites and adverse health effects, although there are no data on percent absorbed.
- No information on the distribution of 1,2-diphenylhydrazine was identified.
- The available data suggest that 1,2-diphenylhydrazine is metabolized to aniline in the gut and that it readily forms benzidine in the acidic stomach.
- No information is available on the excretion of 1,2-diphenylhydrazine; one study reported the presence of unidentified urinary metabolites.

Normal Human Levels
- There is no information on background levels of 1,2-diphenylhydrazine in human.

Biomarkers
- There are no studies located regarding biomarkers of exposure or effects for 1,2-diphenylhydrazine.

Environmental Levels
- Air
  - No ambient air monitoring data are available for 1,2-diphenylhydrazine.
- Water
  - No recent water monitoring samples are available for 1,2-diphenylhydrazine.
- Sediment and Soil
  - 1,2-Diphenylhydrazine has been identified in soil only at hazardous waste sites.

Reference
1,2-Diphenylhydrazine is a Manufactured Substance

- 1,2-Diphenylhydrazine can rapidly oxidize to azobenzene under some environmental conditions.
- 1,2-Diphenylhydrazine has a half-life in water as short as 15 minutes. It is also rapidly oxidized in air and soil.
- The only current use of 1,2-diphenylhydrazine in the United States is in the production of a veterinary anti-inflammatory pharmaceutical agent.

1,2-Diphenylhydrazine in the Environment

- The fate, transport, and distribution of 1,2-diphenylhydrazine in the environment are influenced by its rapid oxidation to azobenzene.
- Because it is rapidly oxidized, it is not likely to persist in water or leach from soil to underlying groundwater.
- 1,2-Diphenylhydrazine is not likely to bioconcentrate in aquatic organisms.

Routes of Exposure

- Inhalation – Not a likely route of exposure for general population.
- Oral – Potential exposure route of concern for general population.
- Dermal – Not a likely route of exposure.

Minimal Risk Levels (MRLs)

Inhalation

- No acute-, intermediate-, or chronic-duration inhalation MRLs were derived for 1,2-diphenylhydrazine.

Oral

- No acute-duration oral MRL was derived for 1,2-diphenylhydrazine.
- An intermediate-duration (15–364 days) oral MRL of 0.05 mg/kg/day was derived for 1,2-diphenylhydrazine.
- No chronic-duration oral MRL was derived for 1,2-diphenylhydrazine.

Health effects are determined by the dose (how much), the duration (how long), and the route of exposure.

Health Effects

- There is limited information on the health effects of 1,2-diphenylhydrazine.
- No epidemiology or human exposure studies are available, and toxicity data are limited to a few oral studies in laboratory animals.
- Hepatic effects have been observed in rats and mice following intermediate or chronic oral exposure. Effects included hypertrophy, fatty metamorphosis, and coagulative necrosis.
- Gastrointestinal (intestinal hemorrhage and stomach hyperkeratosis) and respiratory (interstitial inflammation of the lungs) effects have also been observed in animals.
- Liver mammary gland and Zymbal gland/ear canal tumors have been observed in rats.
- The Department of Health and Human Services (HHS) determined that 1,2-diphenylhydrazine is reasonably anticipated to be a human carcinogen. The Environmental Protection Agency (EPA) determined that 1,2-diphenylhydrazine is a probable human carcinogen.

Children’s Health

- It is not known if children are more sensitive to 1,2-diphenylhydrazine exposure than adults.