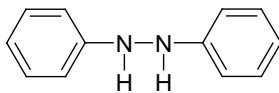


## CHAPTER 4. CHEMICAL AND PHYSICAL INFORMATION

### 4.1 CHEMICAL IDENTITY

Data pertaining to the chemical identity of 1,2-diphenylhydrazine listed in Table 4-1.

**Table 4-1. Chemical Identity of 1,2-Diphenylhydrazine**

| Characteristic                          | Information   |
|---|---|
| Chemical name                           | 1,2-Diphenylhydrazine   |
| Synonym(s) and registered trade name(s) | Hydrazobenzene; N,N'-diphenylhydrazine; sym-diphenylhydrazine                     |
| Chemical formula                        | C <sub>12</sub> H <sub>12</sub> N <sub>2</sub>                                    |
| Chemical structure                      |  |
| Identification numbers:                 |   |
| CAS Registry                            | 122-66-7  |

Source: NLM 2020

CAS = Chemical Abstracts Services

### 4.2 PHYSICAL AND CHEMICAL PROPERTIES

The physical and chemical properties of 1,2-diphenylhydrazine are presented in Table 4-2. 1,2-Diphenylhydrazine can rapidly oxidize to azobenzene under some environmental conditions; therefore, accurate experimental determination of properties such as the water solubility and Henry's Law constant may not be possible.

## 4. CHEMICAL AND PHYSICAL INFORMATION

**Table 4-2. Physical and Chemical Properties of 1,2-Diphenylhydrazine**

| Property                                  | Information   | Reference          |
|---|---|--------------------|
| Molecular weight                          | 184.24  |                    |
| Color                                     | White   | Ahuja et al. 1989  |
| Physical state                            | Crystalline solid   | Dean 1985          |
| Melting point                             | 123–126°C   | NLM 2020           |
| Boiling point                             | 309°C   | NLM 2020           |
| Density at 20°C                           |   |                    |
| Odor                                      | No data   |                    |
| Odor threshold:                           |   |                    |
| Water                                     | No data   |                    |
| Air                                       | No data   |                    |
| Solubility:                               |   |                    |
| Water at 20°C <sup>a</sup>                | 66.9 mg/L (estimated)                                     | NLM 2020           |
| Organic solvents                          | Very soluble in alcohol; slightly soluble in benzene      | Dean 1985          |
| Partition coefficients:                   |   |                    |
| Log K <sub>ow</sub>                       | 2.94 (experimental)                                       | Hansch et al. 1995 |
| Log K <sub>oc</sub>                       | 2.73 (calculated using equation 4–10)                     | Lyman et al. 1982  |
| Vapor pressure at 25°C                    | 2.6x10 <sup>-5</sup> mmHg                                 | EPA 1982a          |
| Henry's law constant at 25°C <sup>a</sup> | 9.42x10 <sup>-8</sup> atm-m <sup>3</sup> /mol (estimated) |                    |
| Autoignition temperature                  | No data   |                    |
| Flashpoint                                | No data   |                    |
| Flammability limits                       | No data   |                    |
| Conversion factors                        | No data   |                    |