GPS Safety Summary
Bis(nonylphenyl)amine

Chemical Identity

Name: bis(nonylphenyl)amine

CAS number: 36878-20-3

Molecular formula: \( \text{C}_{1239}\text{H}_{1165}\text{N} \)

Structure:

\[
\text{R} = \text{H or a strongly branched alkyl chain}
\]

Product Uses

- Bis(nonylphenyl)amine is used as an antioxidant in lubricants. Main applications of Irganox L 67 are mineral oil based engine oils, circulating oils and hydraulic fluids, Synthetic industrial lubricants and greases and Engine oils.

Benefits

When lubricants are exposed to heat, gases, or mechanical stress, the molecules can break down and form radicals, which react with oxygen to cause oil thickening, deposits, and acid build-up. Antioxidants as Irganox L 67 extend the useful life of lubricants by eliminating these radicals and preventing thermo-oxidative breakdown.

Furthermore Irganox L 67 effectively controls lubricant viscosity increase due to oxidation. It offers higher stoichiometric factor than other alkylated diphenylamines for better antioxidant efficiency and offers high nitrogen content and TBN with good seal compatibility.
Machines with moving parts require lubricants for proper operation. Applications vary widely, ranging from micro-robotics to large cutting machines in the mining industry. Each specific application requires special properties from the lubricant, which are imparted through the use of additives.

Health Information

Human Health Safety Assessment

Note: The information contained in the table below may be useful to someone handling the concentrated substance such as a manufacturer or transporter. Consumers are not likely to come in contact with the concentrated substance. The data, while verifiable, are not intended to be comprehensive nor replace the data found in the (M)SDS.

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>Chemicals with similar structure have been shown to be virtually nontoxic after single ingestion and after short-term skin contact. Not classified for acute toxicity after short-term inhalation.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Chemicals with similar structure have been shown to be not irritating to skin and eyes.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Chemicals with similar structure have been shown not to be sensitizing after skin contact.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Chemicals with similar structure have been shown not to be mutagenic.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified for carcinogenicity.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>Chemicals with similar structure have been shown not to be toxic after repeated exposure.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>Chemicals with similar structure have been shown not to be toxic for reproduction.</td>
</tr>
</tbody>
</table>

Environmental Information

Environment Safety Assessment

Note: The information in this chapter is intended to provide brief and general information of this substance’s environmental impact. The results in the table below refer to testing performed with the concentrated substance. The data contained in this section explain the relative effect of the concentrated substance on the environment, as defined by certain tests.
Effect Assessment | Result
--- | ---
Aquatic Toxicity | May cause long lasting harmful effects to aquatic life.
Persistence and degradability | Poorly biodegradable.
Bioaccumulation potential | The product contains components with potential for bioaccumulation

### Physical/Chemical Properties

#### Phys/Chem Safety Assessment

- The concentrated substance is a clear yellow-brown, non flammable liquid. Bis(nonylphenyl)amine is poorly soluble in water. The substance is not explosive.

*Note: The results in the table below refer to testing performed with the concentrated substance. It is not intended to be comprehensive or to replace information found in the (M)SDS.*

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>-43 °C (glass transition point)</td>
</tr>
<tr>
<td>Boiling point</td>
<td>&gt; 300 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 200 °C</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non flammable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Non-explosive</td>
</tr>
<tr>
<td>Self-ignition temperature</td>
<td>440 °C</td>
</tr>
</tbody>
</table>

### Exposure Potential

- **Workplace exposure:** Based on the very low toxicity of bis(nonylphenyl)amine an exposure assessment is not considered necessary. Bis(nonylphenyl)amine released during manufacturing or handling is of no concern for the health of workers since it does not induce any adverse effects at relevant doses.

- **Consumer exposure:** Based on the very low toxicity of bis(nonylphenyl)amine an exposure assessment is not considered necessary. Bis(nonylphenyl)amine released during handling is of no concern for the health of consumers since consumers will not
come into contact with harmful levels of bis(nonylphenyl)amine. Nevertheless consumer should always read product information before use and follow the label/use instructions.

- **Environmental exposure:** As lubricant additive, the concentrations of bis(nonylphenyl)amine in the end use products are small. Emissions to the environment are very low as the products are used under controlled conditions and risk management measures are applied. Conclusively, all identified uses are safe for the environment based on the scientific facts summarized above and when carried out in compliance with recommended risk management measures and applicable regulations.

**Recommended Handling Measures**

*The recommended safety measures generally apply in contact with the concentrated substance. It is NOT intended to replace the comprehensive guidance found in the (M)SDS, only supplement it. Please refer to the (M)SDS for specific safety and first aid measures.*

When using concentrated chemicals always make sure that there is adequate ventilation. Always use appropriate chemical resistant gloves to protect your hands and skin and always wear eye protection such as chemical goggles. Do not eat, drink, or smoke where chemicals are handled, processed, or stored. Wash hands and skin following contact. If the substance gets into your eyes, rinse eyes thoroughly for at least 15 minutes with tap water and seek medical attention. For specific advice please consult the corresponding (Material) Safety Data Sheet of the substance.

All effluent releases that may include the substance must be directed to a (municipal) waste water treatment plant that removes the substance from the final releases to the receiving water.

**Regulatory Information / Classification and Labelling**

Under GHS substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the (M)SDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use.

*Note: The hazard statements and symbols presented here refer to the hazard properties of the concentrated substance and are meant to provide a brief overview of the substance’s labelling. It is not intended to be comprehensive or to replace information found in the (M)SDS.*
Labeling according to UN GHS
UN GHS is the basis for country specific GHS labeling

Signal word: No signal word

Hazard statement:
H413: May cause long lasting harmful effects to aquatic life.

Additional information

1. IFA GESTIS-database on hazardous substances
   http://www.dguv.de/ifa/en/gestis/stoffdb/index.jsp


Most commonly used synonyms

» Benzenamine, ar-nonyl-N-(nonylphenyl)-

Disclaimer
This Product Safety Summary is intended to provide a general overview of the chemical substance. It contains basic information and is not intended to provide emergency response information, medical information or treatment information. The summary cannot be relied on to provide in-depth safety and health information. In-depth safety and health information must be obtained from the Material Safety Data Sheet ((M)SDS) for the chemical substance.

IMPORTANT: While the data and information contained herein are presented in good faith and believed to be accurate at the date of printing, it is provided for your guidance only and may be revised in the future. No warranties of any kind, either express or implied, of merchantability, fitness for a particular purpose or of any other nature are made regarding the data or information provided. Further, it is expressly understood that the data and information furnished by BASF hereunder are given gratis and BASF assumes no obligation or liability whatsoever resulting from use of or reliance on the data and information given.
Contact

For further information on this substance or GPS safety summaries in general, please contact:
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