GPS Safety Summary

**Nickel oxide**

### Chemical Identity

**Name:** Nickel oxide  
**CAS number:** 1313-99-1  
**Molecular formula:** NiO

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IUPAC name:</strong></td>
<td>Oxonickel</td>
</tr>
</tbody>
</table>
| **BASF brand names:** | Ni 0744 P  
AFVAL-Katalysator O8-83 S/13-20 |

### Product Uses

Nickel oxide is used for the production of catalysts, nickel-containing electronic and thermally functioning ceramics and enamel frits. Furthermore, it is used for the production of nickel-containing glass, pigments and special steels.

### 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>Virtually nontoxic after a single ingestion or by inhalation.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Not irritating to the skin or eyes.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Caused sensitization in humans.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Mutagenic properties cannot be excluded on the basis of</td>
</tr>
</tbody>
</table>
Carcinogenicity
The substance caused cancer by inhalation in animal studies.

Toxicity after repeated exposure
Repeated inhalation exposure to low concentrations may affect the lung.

Toxicity for reproduction
The results of animal studies gave no indication of a fertility impairing effect. In animal studies the substance did not cause malformations. The statements have been derived from products of a similar structure or composition.

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.

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Toxicity</td>
<td>Acutely nontoxic within the range of solubility. May cause long lasting harmful effects to aquatic life.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Inorganic substance, therefore biodegradation testing is not applicable.</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>Accumulation in organisms is possible.</td>
</tr>
</tbody>
</table>

Physical/Chemical Properties

Phys/Chem Safety Assessment

» Nickel oxide is a dark grey solid appearing as granules or powder. It is non-combustible and non-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>
</table>
### Physical state
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting / freezing point</td>
<td>&gt; 1900 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</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>Not applicable</td>
</tr>
</tbody>
</table>

### Exposure Potential

- **Workplace exposure**: Exposure can occur either in a nickel oxide manufacturing facility or in the various industrial or manufacturing facilities that use nickel oxide. Those working with nickel oxide in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, as well as safety equipment in place to limit unnecessary exposure. Safety showers and eye-wash stations should be accessible nearby. Workers should follow the recommended safety measures in the extended Safety Data Sheet (eSDS).

- **Consumer exposure**: There is no intended use of nickel oxide in consumer products. Therefore, a health hazard due to exposure for the consumer is negligible.

- **Environmental exposure**: Nickel oxide is not readily biodegradable. The substance is not considered to pose an unacceptable risk for the environment since no toxic effects are expected within the range of the substances’ water solubility. In an exposure assessment covering all identified uses it was demonstrated that releases into the environment do not pose a risk to aquatic life. 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 Labeling**

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 labeling. 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: Danger](image)

**Hazard statements:**
- H317: May cause an allergic skin reaction
- H350: May cause cancer by inhalation
- H372: Causes damage to organs through prolonged or repeated exposure
- 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

2. Information on registered substance (ECHA)

Most commonly used synonyms

» Nickelous oxide
» Nickel monoxide
» Nickel (II) oxide
» Green nickel oxide
» Bunsenite
» Black nickel oxide

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.

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