

# N,N'-Diphenylguanidine

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This document provides a brief description of N,N'-Diphenylguanidine, its uses, and the potential hazards associated with short and long term exposure. Environmental impact information for accidental releases is included. This information is general in nature and is not intended as a replacement for the safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS material safety data sheet.

## Identification

<b>Product Name:</b>	N,N'-Diphenylguanidine
<b>Chemical Name:</b>	N,N'-Diphenylguanidine
<b>Synonym(s):</b>	1,3-Diphenylguanidine Diphenylguanidine DPG
<b>CAS Number:</b>	102-06-7

## Description

<b>Overview:</b>	N,N'-Diphenylguanidine is a white solid at ambient temperatures and is sold in granule form. The chemical has a slight odor.								
<b>Uses:</b>	N,N'-Diphenylguanidine is manufactured by LANXESS for use as a vulcanization accelerator in the production of rubber products.								
<b>Properties:</b>	<table><tr><td><b>Melting Point:</b></td><td>&gt; 293°F (145°C)</td></tr><tr><td><b>Boiling Point:</b></td><td>&gt; 338°F (170°C)</td></tr><tr><td><b>Flash Point:</b></td><td>Approx. 338°F (170°C)</td></tr><tr><td><b>Solubility in Water:</b></td><td>Low</td></tr></table>	<b>Melting Point:</b>	> 293°F (145°C)	<b>Boiling Point:</b>	> 338°F (170°C)	<b>Flash Point:</b>	Approx. 338°F (170°C)	<b>Solubility in Water:</b>	Low
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<b>Solubility in Water:</b>	Low								

## **Potential Human Health Effects**

### **Occupational Exposure**

Potential for occupational exposure exists during manufacture, at transloading facilities, during transfers to storage or staging areas and during the charging of mixers at operations using the product in the manufacture of rubber goods. A much lower potential for exposure exists in facilities using the chemical in closed manufacturing processes by trained personnel.

### **Employee Training**

Workers handling N,N'-Diphenylguanidine are trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. Dust respirators are recommended for product handlers likely to come in direct contact with the substance. In addition, LANXESS recommends that workers wear goggles, permeation resistant clothing, gloves and foot protection when handling N,N'-Diphenylguanidine. Organic vapor respirators and engineering or process controls may be necessary to minimize vapor concentrations within operations where the chemical is heated to thermal decomposition.

### **Consumer Exposure**

LANXESS does not sell N,N'-Diphenylguanidine to the general public. Rubber goods manufactured using N,N'-Diphenylguanidine as an accelerator retain the substance in encapsulated form. Persons susceptible to allergic skin reactions may experience contact dermatitis as a result of direct contact with such products.

### **Short-Term Health Effects**

Direct contact is not expected to be irritating to skin. Susceptible individuals may experience an allergic reaction with symptoms of redness, itching, swelling or rash. N,N'-Diphenylguanidine is irritating to the eyes with symptoms of redness, tearing, stinging and swelling. Inhalation of N,N'-Diphenylguanidine dust or vapors may cause respiratory tract irritation. Ingestion of N,N'-Diphenylguanidine may cause abdominal pain, nausea, vomiting or diarrhea.

### **Long-Term Health Effects**

Long-term or repeated contact with N,N'-Diphenylguanidine may cause skin sensitization. Prolonged eye exposure to N,N'-Diphenylguanidine vapors may cause conjunctivitis. Adverse reproductive effects have been reported in animals.

## **Physical Hazards**

Vulkacit MOZ/LG is a stable, flammable solid. Avoid contact with strong oxidizing agents. High concentrations of N,N'-Diphenylguanidine dust may form explosive mixtures with air. Heating to decomposition may release nitrogen oxide fumes. Exposure to heat, open flames and other potential sources of ignition should be avoided.

## Potential Environmental Impact

N,N'-Diphenylguanidine degrades slowly in the environment. The chemical may pose a danger to fish (moderate toxicity), invertebrates (moderate toxicity) and aquatic plants (moderate toxicity) prior to degrading. Bioaccumulation is not expected.

## Conclusion

Under normal conditions of anticipated use as described in this Product Safety Assessment, and if the recommended safe use and handling procedures are followed, N,N'-Diphenylguanidine is not expected to pose a significant risk to human health or the environment.

## References

*1,3-Diphenylguanidine Screening Information Data Set (SIDS) Initial Assessment Profile*, Organization for Economic Cooperation and Development

*Initial Risk-Based Prioritization of High Production Volume (HPV) Chemicals: 1,3-Diphenylguanidine (CASRN 102-06-7)*, U.S. Environmental Protection Agency (EPA)

*International Chemical Safety Card*, International Programme on Chemical Safety (IPCS)

*Safety Data Sheet (SDS), Vulkacit D/EGC*, LANXESS Corporation

*MedlinePlus Medical Encyclopedia*, U.S. National Library of Medicine and the National Institutes of Health

*ToxNet Hazardous Substances Data Bank*, U.S. National Library of Medicine, National Institutes of Health and the U.S. Department of Health and Human Services

## Contact Information

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## Notices

### Use and Application Information

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