



# MATERIAL SAFETY DATA SHEET

NFPA Rating: Health: 1      Flammability: 0      Reactivity: 0      Special: 0

**TELEPHONE CONTACTS:**  
**Emergency 24-Hour and Technical Information: (800) 433-8871**

**SECTION 1: PRODUCT IDENTIFICATION**

Compound Name:                    **ALPHAGAN® (Brimonidine Tartrate Ophthalmic Solution) 0.2%**

Chemical Class:                    Alpha Adrenergic Receptor Agonist

Manufacturer's Name:              Allergan, Inc.

Address:                              2525 Dupont Drive  
   Irvine, CA 92612

Revision Date:                      July 11, 2000 (Supercedes February 15, 2000)

**SECTION 2: COMPOSITION/HAZARDOUS INGREDIENTS**

Chemical Name	CAS Number	Percent (By Weight)	Exposure Limits in Air (8 hr. TWA)		
			OSHA PEL	ACGIH TLV	ALLERGAN OEL
Brimonidine Tartrate	70359-46-5	0.2	N/E	N/E	12.5µg/m <sup>3</sup>

**SECTION 3: HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** ALPHAGAN® (Brimonidine Tartrate Ophthalmic Solution) 0.2% may cause mild to moderate irritation of the eyes in sensitive individuals. If irritation persists, seek medical attention.

**Potential Health Effects:**

**EYE CONTACT:**                    Contact with the eyes may result in mild to moderate irritation (burning or stinging) in sensitive individuals. Avoid unintentional contact with the eyes.

**SKIN CONTACT:**                    Prolonged contact with the skin may result in mild irritation.

**INHALATION:**                      The product is non-volatile and inhalation is not likely to occur.

**INGESTION:**                        May cause irritation and sedation. At extremely high doses (equivalent to several 15 mL bottles) may cause nausea, headache and confusion.

**CHRONIC EFFECTS:** Repeated ocular use in humans has been shown, in some cases, to produce oral dryness, eye irritation, ocular allergic reactions, headache or fatigue/drowsiness. While **ALPHAGAN® (Brimonidine Tartrate Ophthalmic Solution) 0.2%** had minimal effect on blood pressure of patients in clinical studies, caution should be exercised in use by persons with severe cardiovascular disease.

**ALPHAGAN® (Brimonidine Tartrate Ophthalmic Solution) 0.2%** has been shown to produce ocular allergies in sensitive individuals (fewer than 10 % of all clinical subjects).

No carcinogenic effects were observed when tested in mice and rats. No embryotoxic or teratogenic effects were observed when tested in rats or rabbits at doses in excess of 300 times (rats) and 24 times (rabbits) the anticipated human exposure. No ingredient in this product is regulated or listed as a carcinogen by OSHA, IARC, or NTP.

#### **SECTION 4: FIRST AID MEASURES**

**Eye Contact:** If irritation persists, flush eyes with plenty of water for at least 15 minutes. Obtain medical attention if irritation or other symptoms persist.

**Skin Contact:** Wash skin thoroughly with soap and water. If irritation develops consult a physician

Wash contaminated clothing before reuse.

**Inhalation:** Inhalation is not likely to occur. If symptoms occur, move to fresh air and obtain medical attention. Treat symptomatically.

**Ingestion:** No information is available on overdosage in humans. Treatment of an oral overdose includes supportive and symptomatic therapy. Consult a physician or poison control center immediately if symptoms develop.

#### **SECTION 5: FIRE FIGHTING MEASURES**

**Flash Point and Method:** Greater than 200°F (Seta Flash Cup)

**Flammable Limits:** Not applicable

**Autoignition Temperature:** No data for this product

**Fire-Extinguishing Materials:** Material is non-flammable. Use extinguishing media suitable for materials supporting combustion such as water fog, CO<sub>2</sub>, foam or dry chemical

**Fire fighting Procedures:** Use self-contained breathing apparatus in enclosed or confined spaces or as otherwise needed.

**Unusual Fire and Explosion Hazards:** None known

## SECTION 6: ACCIDENTAL RELEASE MEASURES

Wipe up spilled liquid with absorbent material and wash area with water. If large quantities are spilled, flush spill area with water.

## SECTION 7: HANDLING AND STORAGE

**Handling:** Avoid unintentional contact with skin surfaces. Wash thoroughly after handling. Observe all precautions contained on product label and package insert..

**Storage:** Store in a cool, dry location out of direct sunlight. Keep container closed when not in use.

## SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Engineering Controls:** None necessary for normal product handling.

**Respiratory Protection:** None necessary for normal product handling.

**Eye Protection:** None required for normal product handling.

**Protective Clothing:** None required for normal product handling.

**Hygienic Work Practices:** Wash hands thoroughly after handling. If working with large quantities of liquid (such as spill clean-up), use latex or chemical resistant gloves and appropriate eye protection. No eating, drinking or smoking in area.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Vapor Density (Air = 1):** No data for this product

**Boiling Point:** >100° C (>212° F)

**Solubility in Water:** Soluble

**Specific Gravity:** Approximately 1.0

**pH:** 6.3 - 6.5

**Vapor Pressure (mm Hg at 20° C):** No data for this product

**Appearance and Odor:** Clear liquid with slight odor

## SECTION 10: STABILITY AND REACTIVITY

**General:** This product is stable and hazardous polymerization will not occur.

**Incompatible Materials and Conditions to Avoid:** Store away from oxidizers and heat. Store below 25 °C.

**Hazardous Decomposition:** None known

## SECTION 11: TOXICOLOGICAL INFORMATION

**Oral:** The oral LD50 for Brimonidine Tartrate was determined to be 50 mg/kg in mice and 100 mg/kg in rats, equivalent in dosage to 25 g/kg in mice and 50 g/kg in rats of **ALPHAGAN® (Brimonidine Tartrate Ophthalmic Solution) 0.2%**. Incidence of mortality was not consistent, and was apparently due to hypothermia and starvation. Clinical signs included sedation, ataxia, prostration, ptosis, reduced blink reflex, hypotension, hypothermia, respiratory depression/arrest, and circulatory collapse. At a dose of 3.0 mg/kg (equivalent to one 15 mL bottle ingested by a 10 kg child), no clinical signs of toxicity were observed in mice or rats. At a dose of 10 mg/kg (equivalent to three bottles), transient decreased motor activity, ataxia and/or prostration were observed in both species.

Oral administration of Brimonidine Tartrate for one year in rats resulted in toxicity only at the high dose (1.0 mg/kg/day). All changes were reversible within the 8 week recovery period. In monkeys, administration of Brimonidine Tartrate for one year resulted in sedation, slight hypotension, sinus bradycardia, and occasionally, sinus arrhythmia at a dose of 2.5 mg/kg/day. No observable effects were noted at a dose of 0.1 mg/kg/day

**Ocular:** Brimonidine Tartrate at varying concentrations was administered in repeated doses (one drop into one eye twice per day) to rabbits for six months and monkeys for one year. Rabbits exhibited dose-dependent sedation at the 0.5 % concentration but not at the 0.2% concentration. Monkeys treated with up to 0.8% solution showed no local or systemic effects.

In human clinical trials, **ALPHAGAN® (Brimonidine Tartrate Ophthalmic Solution) 0.2%** was administered twice per day for one year. The most frequent adverse events, in descending order, were oral dryness, ocular hyperemia, burning/stinging, blurring, headache, fatigue/drowsiness, eye irritation and ocular allergies. No clinically significant changes in heart rate or blood pressure were measured in the treatment group.

**Reproduction:** In reproduction studies performed in rats at oral doses more than 100 times (0.66 mg base/kg) the plasma drug concentration in humans receiving multiple ophthalmic doses, Brimonidine Tartrate produced no evidence of impaired fertility or harm to the fetus.

**Mutagenicity:** **ALPHAGAN® (Brimonidine Tartrate Ophthalmic Solution) 0.2%** was not mutagenic or cytogenic in a series of *in vitro* and *in vivo* studies including the Ames test, host-mediated assay, chromosomal aberration assay in Chinese Hamster Ovary (CHO) cells, cytogenic studies in mice and dominant lethal assay.

## SECTION 12: ECOLOGICAL INFORMATION

No ecological information is available for the product.

## SECTION 13: DISPOSAL CONSIDERATIONS

For small quantities of **ALPHAGAN® (Brimonidine Tartrate Ophthalmic Solution) 0.2%**, discard as ordinary trash. For large quantities, contact Allergan for information on disposal options.

## SECTION 14: TRANSPORT INFORMATION

Not a hazardous material for DOT, IATA, IMO or TDG shipment.

## SECTION 15: REGULATORY INFORMATION

### **TSCA (Toxic Substances Control Act):**

Components of this product are listed on the TSCA Inventory.

### **CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):**

This product contains no components subject to reporting or notification requirements.

### **SARA Title III (Superfund Amendments and Reauthorization Act):**

**311/312 Hazard Categories:** Immediate Health

**313 Reportable Ingredients:** None

### **California Proposition 65:**

This product contains no components known to the State of California to cause cancer or reproductive effects.

### **WHMIS (Workplace Hazardous Materials Information System - Canada):**

Not Regulated (Product is regulated by the Food and Drugs Act)

## SECTION 16: OTHER INFORMATION

**Revision Summary:** MSDS revised July 11, 2000 (Supercedes February 15, 2000)

The preceding information is based on available data and is believed to be correct. However, no warranty is expressed or to be implied regarding the accuracy of this information, the results to be obtained from the use thereof or the hazards connected with the use of the material. Since the information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, Allergan does not assume any responsibility for the results of its use. This information is furnished upon the condition that the persons receiving it shall make their own determinations of the effects, properties, and protections which pertain to their particular conditions.