



Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: PHOS-CHEK® FIRE RETARDANT GRADES 259F, 259R, 259W

Reference Number: AST10030

Date: February 11, 2003

Company Information:

ASTARIS LLC
622 Emerson Road - Suite 500
St. Louis, Missouri 63141

Emergency telephone: In USA call CHEMTREC: 1-800-424-9300
In Canada call CANUTEC: 1-613-996-6666

General Information: 1-800-244-6169

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS No.</u>	<u>% by weight</u>
Diammonium Phosphate	7783-28-0	> 90
Guar Gum, or a derivative	9000-30-0	< 5
Performance Additives +	Trade Secret	5 – 10

+The specific chemical identities are being withheld because they are trade secret information of Astaris. They will be disclosed on a confidential basis to regulatory authorities and health professionals.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: Free-flowing mixture of powdered and granular components.
Grade 259F contains a coloring pigment and is reddish in color.
Grade 259R contains an iron oxide coloring pigment and is reddish in color.
Grade 259W does not contain a color pigment and is an off-white color.

WARNING STATEMENTS

WARNING!
MAY CAUSE ALLERGIC RESPIRATORY REACTION
CONTAINS GUAR GUM WHICH MAY CAUSE RESPIRATORY TRACT IRRITATION

POTENTIAL HEALTH EFFECTS

Likely Routes of Exposure: Skin contact and inhalation

EYE CONTACT: This product is no more than moderately irritating based on toxicity studies.

SKIN CONTACT: This product is no more than slightly toxic or slightly irritating based on toxicity studies. Prolonged contact with the skin can result in drying or chapping.

INHALATION: This product may cause nasal and respiratory tract irritation based on toxicity information of components. May cause an allergic respiratory tract reaction based on toxicity information of quar gum.

INGESTION: This product is no more than slightly toxic. Significant adverse health effects are not expected to develop if only small amounts (less than a mouthful) are swallowed.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Workers with compromised pulmonary (lung) function should have limited exposure to this material.

Refer to Section 11 for toxicological information.

4. FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water for at least 15 minutes. If easy to do, remove any contact lenses. If irritation persists, seek medical attention.

IF ON SKIN, immediate first aid is not likely to be required. However, this material can be removed with soap and water. Wash heavily contaminated clothing before reuse.

IF INHALED, remove to fresh air. Immediate first aid is not likely to be required, if breathing. If breathing is difficult, give oxygen. If not breathing give artificial respiration. Get medical attention.

IF SWALLOWED, immediate first aid is not likely to be required. A physician or Poison Control Center can be contacted for advice.

5. FIRE FIGHTING MEASURES

FLASH POINT: Not combustible

HAZARDOUS PRODUCTS OF COMBUSTION: Not applicable

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known

6. ACCIDENTAL RELEASE MEASURES

In case of spill, sweep, scoop or vacuum and remove. Flush residual spill area with water.

Refer to Section 13 for disposal information and Sections 14 and 15 for reportable quantity information.

7. HANDLING AND STORAGE

HANDLING

Do not breathe dust.
Keep container closed.
Use with adequate ventilation.

STORAGE: Emptied container retains dust and product residue. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed. The reuse of this material's container for non industrial purposes is prohibited and any reuse must be in consideration of the data provided in the MSDS.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

SKIN PROTECTION: Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove for given application. Wash contaminated skin promptly. Launder contaminated clothing and clean protective equipment before reuse. Wash thoroughly after handling.

RESPIRATORY PROTECTION: Avoid breathing dust. Use NIOSH/MSHA approved respiratory protection equipment when airborne exposure is excessive. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 CFR § 1910.134.

Attention! Repeated or prolonged inhalation may cause allergic respiratory reaction in some people.

VENTILATION: Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

AIRBORNE EXPOSURE LIMITS: OSHA and ACGIH have not established specific exposure limits for this material. However, OSHA and ACGIH have established limits for particulates not otherwise classified (PNOC) which are the least stringent exposure limits applicable to dusts.

OSHA PEL
15 mg/m³ (total dust) 8-hr TWA
5 mg/m³ (respirable) 8-hr TWA

ACGIH TLV
10 mg/m³ (inhalable) 8-hr TWA
3 mg/m³ (respirable) 8-hr TWA

<u>Product/Component</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
PHOS-CHEK Fire Retardant Grades 259F, 259R, 295W	None established	None established

Components referred to herein may be regulated by specific Canadian provincial legislation. Please refer to exposure limits legislated for the province in which the substance will be used.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Free-flowing mixture of powdered and granular components. Grades 259F contains a coloring pigment and is reddish in color. Grade 259R contains an iron oxide coloring pigment and is reddish in color. Grade 259W does not contain a color pigment and is an off-white color.

pH: 7.5 ± 0.5 (@ use concentration)

Viscosity: 75-250 cps @ 75 degrees F (24 degrees C) when dissolved in water at a rate of 1.14 pounds per U.S. gallon (0.137 kilograms per liter) of water.

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

10. STABILITY AND REACTIVITY

STABILITY: These products are stable under normal conditions of storage and handling.

MATERIALS TO AVOID: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Ammonia and phosphoric acid will be formed when heated above 212 degrees F (100 degrees C).

HAZARDOUS POLYMERIZATION: Does not occur

11. TOXICOLOGICAL INFORMATION

Data from Astaris single-dose (acute) animal studies with this material are given below:

Single exposure (acute) studies indicate:

PHOS-CHEK Fire Retardant Grades 259F

Oral -	Slightly Toxic	(Rat LD50 3,100 mg/kg)
Dermal -	No More Than Slightly Toxic	(Rabbit LD50 > 2,000 mg/kg)
Eye Irritation -	Moderately Irritating	
Skin Irritation -	Slightly Irritating	

PHOS-CHEK Fire Retardant Grades 259F Solution

(Dry retardant mixed with water at rate of 1.14 lbs. per U.S. gallon / 0.137 kilograms per liter)

Oral -	Practically Nontoxic	(Rat LD50 > 5,000 mg/kg)
Dermal -	No More Than Slightly Toxic	(Rabbit LD50 > 2,000 mg/kg)
Eye Irritation -	Moderately Irritating	(Rabbit, 0.7/110.0)

COMPONENTS

Data from Astaris studies and/or the available scientific literature on the components of this material which have been identified as hazardous chemicals under the criteria of the OSHA

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Hazard Communication Standard (29 CFR 1910.1200) are discussed below:

Guar Gum, or a derivative

This product contains hydroxypropylguar, which was reported to be irritating to eyes and respiratory tract. Respiratory allergenic responses were reported following repeated exposures in a study of a small group of exposed workers.

12. ECOLOGICAL INFORMATION

Astaris has not conducted environmental toxicity studies on this product. However, tests conducted with a similar fire retardant formulation, are summarized below.

Oral LD50 Bobwhite quail, >2,510 mg/kg:	Practically Nontoxic
Oral LD50 Mallard duck, >2,510 mg/kg:	Practically Nontoxic

Data from the scientific literature indicate the following:

	Practically Nontoxic
96-hr LC50 Bluegill sunfish, 350 mg/l:	
96-hr LC50 Fathead minnow, 300 mg/l:	Practically Nontoxic
96-hr LC50 Largemouth bass, 450 mg/l:	Practically Nontoxic
96-hr LC50 Scud, 40 mg/l:	Slightly Toxic
96-hr LC50 Coho Salmon yolk-sac fry, 145 mg/l:	Practically Nontoxic
96-hr LC50 Coho Salmon fingerling, 245 mg/l:	Practically Nontoxic
96-hr LC50 Rainbow trout yolk-sac fry, 115 mg/l:	Practically Nontoxic
96-hr LC50 Rainbow trout fingerling, 160 mg/l:	Practically Nontoxic

13. DISPOSAL CONSIDERATIONS

This material when discarded is not a hazardous waste as that term is defined by the Resource, Conservation and Recovery Act (RCRA), 40 CFR 261. Dry material may be landfilled or recycled in accordance with local, state and federal regulations. Consult your attorney or appropriate regulatory officials for information on such disposal.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

US DOT

Not hazardous for transport

Canadian TDG

Not hazardous for transport

15. REGULATORY INFORMATION

TSCA Inventory: Listed

DSL Inventory: Listed

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WHMIS Classification D2(B) - Materials Causing Other Toxic Effects

SARA Hazard Notification

Hazard Categories Under Title III Rules (40 CFR 370): Immediate

Section 302 Extremely Hazardous Substances: Not Applicable

Section 313 Toxic Chemical(s): When put in solution, this product contains aqueous ammonia from dissociable ammonium salts. 2.4 percent of this dry powder product is reportable under the requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CERCLA Reportable Quantity: Not applicable

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation and the MSDS contains all the information required by the Canadian Controlled Products Regulation.

Refer to Section 11 for OSHA/HPA Hazardous Chemical(s) and Section 13 for RCRA classification.

16. OTHER INFORMATION

	Health	Fire	Reactivity	Additional Information
Suggested NFPA Rating	1	0	0	
Suggested HMIS Rating	1	0	0	E

Reason for revision: Update toxicological data Supersedes MSDS dated: July 27, 2000

Product Use: Fire retardant

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