# **GLCC Laurel**, llc

**MATERIAL SAFETY DATA SHEET** 

MSDS Number: 01731

Product Name: FireShield® H3DP

**Effective Date:** 09/10/2004

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# SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** 

FireShield® H3DP

Manufacturer:

GLCC Laurel, LLC

Address: State:

P.O. Box 2200

Indiana

City: Zip:

West Lafayette 47996-2200

**Emergency Telephone Number:** 

1-800-949-5167

**Information Telephone Number:** 

1-765-497-6100

Fax:

1-765-497-6123

**Chemtrec Phone: Effective Date:** 

09/10/2004

1-800-424-9300; Internationally call 703-527-3887 **Supercede Date:** 

None

MSDS Prepared By:

Regulatory Affairs Department/Great Lakes Chemical Corporation

Synonyms: **Product Use:**  Antimony trioxide damped with diisodecyl phthalate

Flame Retardant

**Chemical Name:** 

Mixture

**Chemical Family:** 

Metal oxide/Phthalate Blend

Additional Information

No information available

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS						
INGREDIENT NAME	CAS No.	%	EXPOSURE LIMITS			
Antimony trioxide	1309644	96	Y (Hazardous)			
		minimum	0.5 mg/m3 as Sb (OSHA PEL TWA)			
			Not established (OSHA PEL STEL)			
			Not established (OSHA PEL CEIL)			
			0.5 mg/m3 as Sb (ACGIH TLV TWA)			
			Not established (ACGIH TLV STEL)			
			Not established (ACGIH TLV CEIL)			
Arsenic	7440382	0.5	Y (Hazardous)			
		maximum	0.01 mg/m3 (OSHA PEL TWA)			
			Not established (OSHA PEL STEL)			
			Not established (OSHA PEL CEIL)			
			0.01 mg/m3; A1 (ACGIH TLV TWA)			
			Not established (ACGIH TLV STEL)			
		·	Not established (ACGIH TLV CEIL)			
Diisodecyl phthalate	68515491	3	Y (Hazardous)			
			5 mg/m3 for similar phthalate esters (OSHA PEL TWA)			
			Not established (OSHA PEL STEL)			
			Not established (OSHA PEL CEIL)			
			5 mg/m3 for similar phthalate esters (ACGIH			
			TLV TWA)			
			Not established (ACGIH TLV STEL)			
			Not established (ACGIH TLV CEIL)			
Lead	7439921	0.1	Y (Hazardous)			
		maximum	0.05 mg/m3 (OSHA PEL TWA)			
			Not established (OSHA PEL STEL)			
		ļ	Not established (OSHA PEL CEIL)			
		1	0.05 mg/m3; A3 (ACGIH TLV TWA)			
			Not established (ACGIH TLV STEL)			
			Not established (ACGIH TLV CEIL)			

\*Indented chemicals are components of previous ingredient.

Additional Information

Additional limits:

MARKETED BY

# HARWICK STANDARD DISTRIBUTION CORPORATION

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Antimony trioxide: NIOSH REL = 0.5 mg/m3 IDLH = 50 mg/m3 as Sb

Arsenic:

NIOSH REL = C0.002 mg/m3 (15 minutes)

OSHA 29 CFR 1910.1018

Lead:

NIOSH REL = <0.1 mg/m 3 (Blood Pb<0.06 mg/100 g whole blood)

OSHA 29 CFR 1910.1025

## **SECTION III - HAZARDS IDENTIFICATION**

Emergency Overview: White powder

No odor

DANGER. CONTAINS INORGANIC ARSENIC. CANCER HAZARD. HARMFUL IF INHALED OR SWALLOWED. USE ONLY WITH ADEQUATE VENTILATION OR RESPIRATORY PROTECTION.

Causes eye irritation.

May cause skin irritation.

Relevant Routes of Exposure: Signs and Symptoms of Overexposure: Ingestion, inhalation and skin absorption

General reddening, irritation and eruptions of the skin. Mechanical irritation of the eyes and respiratory tract. Shortness of breath, nosebleeds, headache,

dizziness, nausea and vomiting, stomach pain and diarrhea.

Acute arsenic poisoning is rare in industry. Prolonged contact may have corrosive effects to skin and mucous membranes. Chronic arsenic poisoning due to long term inhalation exposure manifest in phases. Initial symptoms may include weakness, anorexia (loss of appetite), nausea, vomiting, heaviness in stomach, and diarrhea. Secondly; conjunctivitis, coryza, hoarseness, mild tracheobronchitis, perforation of the nasal septum, and skin lesions may occur. More severe symptoms could include peripheral neuritis and on rare occasions

motor paralyses.

**Medical Conditions Generally** 

Aggravated By Exposure: Dermatitis

**Potential Health Effects:** See Section XI for additional information.

Eyes:

Skin:

Causes eye irritation.

May cause skin irritation.

Repeated or prolonged skin contact may cause a dermatitis termed ""antimony spots"". Symptoms may include intense itching followed by skin eruptions that

are most common in areas of friction and sweating.

**Ingestion:** Prolonged and excessive ingestion of antimony trioxide may cause

gastrointestinal upset, ulcers, blood effects, liver effects, neurological effects, inflammation of mucous membranes and stomatitis. The similarity of these symptoms with those of other illnesses require that excessive absorption of

antimony be verified by biological specimens.

**Inhalation:** Prolonged and excessive inhalation exposures to antimony or antimony trioxide

may result in inflammation of the lungs, airway obstruction, bronchospasm, chronic bronchitis, reproductive effects, cardiovascular effects, gastrointestinal

upset, liver effects, and neurological effects.

As with any dust, mechanical irritation to the respiratory system is possible.

Chronic Health Effects: Prolonged and excessive inhalation or ingestion exposures to antimony or

antimony trioxide may result in inflammation of the lungs, airway obstruction, bronchospasm, chronic bronchitis, reproductive effects, cardiovascular effects, gastrointestinal upset, ulcers, liver effects, blood effects and neurological effects.

Antimony trioxide has been classified by IARC as a Class 2B. An IARC 2B material exhibits sufficient evidence in animal tests (possible human carcinogen).

Antimony trioxide production has been determined by ACGIH to be a

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# **SECTION III - HAZARDS IDENTIFICATION**

carcinogenic risk. Antimony trioxide has been identified by the EPA as a suspected lung carcinogen (IARC Class 2B). For additional information see

Section XI.

Arsenic has been designated as a carcinogen, causing lung and skin cancer. Arsenic has been classified by IARC, NTP, OSHA, NIOSH, EPA and ACGIH as

a confirmed carcinogen.

Lead has been classified by IARC as a possible human carcinogen (Class 2B). Human evidence is inadequate and animal evidence is sufficient for this IARC classification. ACGIH states that other sources have identified this material as a suspected or confirmed human carcinogen and has classed it as a Category A3. Animal Carcinogen. Chronic overexposure to lead may result in bloodk, central

nervous system, kidney and reproductive effects.

Carcinogenicity:

NTP: Yes ACGIH: Yes IARC: Yes OTHER: Yes

Additional Information

No information available

OSHA:

## **SECTION IV - FIRST AID MEASURES**

Yes

Eves: Flush with large volumes of water for at least 15 minutes. Get medical attention.

Skin: Wash with large volumes of soap and water for at least 15 minutes. If irritation

develops, get medical attention.

Ingestion: If conscious, give person 1 to 2 glasses of water. Get medical attention

immediately.

Inhalation: Remove person to fresh air. Get medical attention.

Antidotes: No information available

Notes to Physicians and/or Protection

for First-Aiders: No information available

Additional Information

No information available

# **SECTION V - FIRE FIGHTING MEASURES**

Flammable Limits in Air (% by

Volume): Not available Flash Point: Not applicable **Autoignition Temperature:** Not available

**Extinguishing Media:** All conventional media are suitable.

Fire Fighting Instructions: Wear a self-contained breathing apparatus and protective clothing to prevent skin

and eye contact in fire situations.

Unusual Fire and Explosion Hazards:

Under fire conditions, toxic and irritating fumes may be emitted.

Flammability Classification: **Known or Anticipated Hazardous** 

**Products of Combustion:** 

Oxides of antimony Organic acids Oxides of arsenic Oxides of lead

Non-flammable solid

Additional Information

No information available

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# SECTION VI - ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Contain spill.

Wearing appropriate personal protective equipment, carefully sweep up material

and place in suitable labeled containers for disposal.

Residual dusts can be removed by vacuuming with a high-efficiency particulate

filter vacuum.

Wash spill area after pick-up is complete, collecting all clean up water for

appropriate disposal.

Personal Precautions: See Section VIII.

**Environmental Precautions:** Avoid releasing to the environment.

Additional Information

No information available

## SECTION VII - HANDLING AND STORAGE

Handling: Use appropriate personal protection equipment.

Avoid eye, skin and clothing contact.

Avoid breathing dust.

Avoid repeated and prolonged contact. Avoid creating a dusting situation. Use only in a well ventilated area.

Storage: Store in a cool, dry, well-ventilated area away from incompatible materials.

Keep container tightly closed. Protect containers against damage.

Other Precautions: Keep away from food, drink, tobacco products, and cosmetics.

Additional Information

No information available

# SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Adequate general ventilation is recommended when handling to control airborne

levels.

**Ventilation Requirements:** Use local ventilation to keep levels below established threshold values.

Use mechanical ventilation for general area control. Refer to OSHA 29 CFR 1910.94 for ventilation guidelines.

Portable vacuum systems equipped with HEPA filters or high efficiency filters

should be utilized for jobs outside normal ventilation areas.

**Personal Protective Equipment:** 

Eye/Face Protection: Chemical safety glasses with side shields or chemical safety goggles

Skin Protection: Chemical resistant gloves

Clothing designed to minimize skin contact

Respiratory Protection: Wear a NIOSH/MSHA approved dust respirator if dusting occurs, or there is

potential for airborne exposures to exceed established threshold values.

Consult the OSHA respiratory protection information located at 29CFR 1910.134

and the American National Standard Institute's Practices of Respiratory

Protection Z88.2.

Other Protective Clothing or

**Equipment:** No information available

**Exposure Guidelines:** See Section II.

Work Hygienic Practices: Wash thoroughly after handling.

Work clothing should not leave worksite. Wash contaminated clothing before reuse.

Keep work areas clean.

Do not eat, drink, chew gum, use tobacco products, or apply cosmetics in work

areas.

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# SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional Information

No information available

# SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

White powder Percent Volatile: Appearance: **Boiling Point:** Not available pH Value: Not available **Bulk Density:** Not available pH Concentration: Not available White Physical State: Solid

Color: **Decomposition Temperature:** Not available Reactivity in Water: Not water reactive

**Evaporation Rate:** Not available Saturated Vapor

Not available Concentration: Not available **Softening Point:** Not available Freezing Point: Heat Value: Not available Solubility in Water: Slightly soluble

**Melting Point:** Not available Specific Gravity or Density (Water=1):

Molecular/Chemical Formula: Mixture Vapor Density: Not available

0.345 atm at 200 degrees C Molecular Weight: Vapor Pressure:

Not available Octanol/Water Partition Coefficient: Viscosity: Not available

No odor Volatile Organic Odor:

Compounds: Not available **Odor Threshold:** Not available Water/Oil Distribution

Coefficient: Not available

Not available Weight Per Gallon: Not available Particle Size:

Additional Information

No information available

# SECTION X - STABILITY AND REACTIVITY

Stability: Stable under normal conditions of handling and use.

**Conditions to Avoid:** Extreme humidity

**Incompatibility With Other Materials:** 

Strong acids Strong bases Hot perchloric acid Strong oxidizers

**Hazardous Decomposition Products:** 

Thermal decomposition may produce the following:

Oxides of antimony Organic acids Oxides of arsenic Oxides of lead

**Hazardous Polymerization:** 

Will not occur

None

**Conditions to Avoid:** 

Additional Information

No information available

SECTION XI - TOXICOLOGICAL INFORMATION						
VALUE (LD50 OR LC50)	ANIMAL	ROUTES	COMPONENTS			
46,200 ug/kg	Mouse	Acute Intraperitoneal	Arsenic			
145 mg/kg	Mouse	Acute Oral	Arsenic			
172 mg/kg	Mouse	Acute Intraperitoneal	Antimony trioxide			
>2,000 mg/kg	Rabbit	Acute Dermal	Antimony trioxide			
763 mg/kg	Rat	Acute Oral	Arsenic			
>34,600 mg/kg	Rat	Acute Oral	Antimony trioxide			

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SECTION XI - TOXICOLOGICAL INFORMATION					
13,390 ug/kg	Rat	Acute Intraperitoneal	Arsenic		
3,250 mg/kg	Rat	Acute Intraperitoneal	Antimony trioxide		

#### **Toxicological Information:**

The toxicological properties of this material have not been fully determined.

#### Antimony trioxide:

May cause skin irritation. Causes eye irritation. In animals, cataracts have been produced; however, this effect is not reported in humans.

Prolonged and excessive inhalation exposures to antimony or antimony trioxide may result in inflammation of the lungs, airway obstruction, bronchospasms, chronic bronchitis, reproductive effects, cardiovascular effects, gastrointestinal upset, liver effects, and neurological effects (muscle weakness, abnormal gait).

Prolonged and excessive oral exposure may result in gastrointestinal discomfort and ulcers, blood effects, liver effects, neurological effects, inflammation of mucous membranes and stomatitis.

In a recent 90 day oral study in male and female rats, no adverse effects were observed at doses of 1000, 5000 and 20000 ppm. The No Adverse Effect Level for antimony trioxide was 20000 ppm for both sexes.

In a developmental study in Sprague-Dawley rats consisting of three treatment groups and a control group, each containing 26 females at doses of 2.6, 4.4 and 6.3 mg/m3, not developmental effects were observed. The LOAEL for maternal toxicity was established at 2.6 mg/m3. The NOEL for developmental toxicity was 6.3 mg/m3, the highest exposure level evaluated.

Antimony trioxide has been classified by IARC as a Class 2B. An IARC 2B material exhibits sufficient evidence in animal tests (possible human carcinogen). Antimony trioxide production has been determined by ACGIH to be a carcinogenic risk. Antimony trioxide has been identified by the EPA as a suspected lung carcinogen. Historical studies have concluded that exposure to elevated levels of antimony oxide may cause lung carcinoma. However, the most recent study conducted under the EPA's Voluntary Test Program by the Antimony Oxide Industry Association (AOIA), has concluded that antimony does not cause lung cancer in rats at occupational exposure levels. The levels tested ranged from 0.05 mg/L to 5 mg/L (from one-tenth to ten times the OSHA TWA Threshold Limit Value).

#### Arsenic:

Arsenic is toxic by inhalation, ingestion and skin absorption. Arsenic has been found to be a cancer hazard in humans, causing lung, liver, kidney, bladder and skin cancer.

#### Lead:

Lead has been found to be harmful by ingestion or inhalation. Short term exposures can lead to acute encephalopathy which can develop quickly to seizures, coma and death from cardiorespiratory arrest. Chronic overexposure to lead may result in severe damage to blood-forming, nervous, urinary and reproductive systems. Damage to the central nervous system in general and the brain in particular is one of the most severe forms of lead poisoning. Kidney disease can occur with out symptoms and not be detected until two-thirds of kidney function is lost. Lead impairs the reproductive system of both men and women, resulting in impotence, sterility, decreased fertility and abnormal menstrual cycles. Developmental effects may result from either parent being exposed to excess lead levels. Lead has been classified by IARC as a possible human carcinogen (Class 2B). Human evidence is inadequate and animal evidence is sufficient for this IARC classification. ACGIH states that other sources have identified this material as a suspected or confirmed human carcinogen and has classed it as a Category A3, Animal Carcinogen.

#### Diisodecyl phthalate:

This material has been found to cause mild eye and skin irritation. Negative results were obtained in a mutagenicity study with Salmonella typhimurium. When tested on Bacillus subtilis and E. coli for repair, negative results were obtained. Laboratory studies have demonstrated that adverse reproductive effects may occur at high doses. Dietary administration of this material has produced hepatomegaly, proliferation of hepatic peroxisomes and alterations in serum triglyceride and cholesterol levels.

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# SECTION XII - ECOLOGICAL INFORMATION

**Ecological Information:** The following ecological information is offered:

For antimony ion (Sb 3+)

LC50 (96H) in Fathead minnow (Pimephales promelas) = 21.9 mg/L

LC50 (48H) in Daphnia magna =18.8 mg/L

In a chronic study in Daphnia magna, a 21 day NOEC for reproduction toxicity

was established at 1.74 mg/L.

In a 42-day chronic sediment test with Hyalella azteca, growth effects after 28

days resulted in a NOEC of 124 mg/kg dw.

In a 42-day soil toxicity test with Enchytraeus albidus, mortality and

reproduction resulted in the same NOEC and LOEC values of 760 mg/kg dw and

2,012 mg/kg dw, respectively.

Inhibition action on bacteria (Pseudomonas putida): At 3.5 mg/L no inhibiting

action

EbC50 in Alga Rhaphidocelis subcapitata (72H) >2.4 mg/L ErC50 in Alga Rhaphidocelis subcapitata (72H) >2.4 mg/L

Avoid releasing to the environment.

Additional Information

No information available

# SECTION XIII - DISPOSAL CONSIDERATIONS

Disposal Considerations: Dispose of waste at an approved chemical disposal facility in compliance with all

current Local, State/Province, Federal/Canadian laws and regulations.

Additional Information

No information available

## **SECTION XIV - TRANSPORT INFORMATION**

U.S.	DO.	J
		-

Proper Shipping Name: Not regulated for containers less than 200 lb.

For containers 200-1030 lb:

Environmentally hazardous substances, solid, n.o.s. (Contains Arsenic)

See Additional Information.

Hazard Class:9ID Number:UN3077Packing Group:IIILabels:Miscellaneous

**Special Provisions:** 8, B54, IB8, N20 **Packaging Exceptions:** 155 Non-Bulk Packaging: 213 **Bulk Packaging:** 240 Passenger Air/Rail Limit: None Air Cargo Limit: None Vessel Stowage: Other Stowage: A N/A

Reportable Quantity: See Below

AIR - ICAO OR IATA

**Proper Shipping Name:** Not regulated unless covered by a State or operator variation.

**Hazard Class:** N/A ID Number: N/A Subsidiary Risk: N/A Packing Group: N/A **Hazard Labels:** N/A **Packing Instructions:** N/A Air Passenger Limit Per Package: N/A Packing Instruction -N/A Cargo:

Air Cargo Limit Per Package: N/A Special Provisions Code: N/A

WATER - IMDG

**Proper Shipping Name:** Not regulated

Hazard Class: N/A ID Number: N/A
Packing Group: N/A Subsidiary Risk: N/A

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# **SECTION XIV - TRANSPORT INFORMATION**

Medical First Aid Guide Code:

Additional Information

For containers 1.031-9.999 lb:

Environmentally hazardous substances, solid, n.o.s. (Contains Arsenic and Antimony Trioxide)

N/A

For containers 10,000 lb or greater:

Environmentally hazardous substances, solid, n.o.s. (Contains Arsenic, Lead and Antimony Trioxide)

**CERCLA ROs:** 

Antimony trioxide RQ = 1,000 lb

Arsenic RQ = 1 lb Lead RQ = 10 lb

# **SECTION XV - REGULATORY INFORMATION**

## U.S. Federal Regulations:

The components of this product are either on the TSCA Inventory or exempt (i.e. impurities, a polymer complying with the exemption rule at 40 CFR 723.250) from the Inventory.

For arsenic see OSHA 29 CFR 1910.1018.

For lead see OSHA 29 CFR 1910.1025.

#### **SARA 313**

The following materials are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Antimony trioxide (de minimis concentration = 1%)

Arsenic (de minimis concentration = 0.1%)

Lead (de minimis concentration = 0.1%)

#### **CERCLA Reportable Quantities:**

Antimony trioxide RQ = 1,000 lb

Arsenic RQ = 1 lb

Lead RQ = 10 lb

#### **State Regulations:**

Antimony trioxide:

New Jersey Right To Know Hazardous Substance List (1% reporting limit)

Massachusetts Substance List

Pennsylvania Environmental Hazard List

California Proposition 65: WARNING: This product contains antimony trioxide, known by the State of California to cause cancer.

#### Arsenic:

Massachusetts Substance List - Carcinogen

New Jersey Special Health Hazard Substance List (0.1% reporting limit)

Pennsylvania Environmental Hazard List and Special Hazardous Substance List

California Proposition 65: No-significant risk levels are 0.06 ug/day (inhalation) and 10 ug/day (except inhalation)

WARNING: This product contains arsenic, known by the State of California to cause cancer and reproductive toxicity.

#### Lead:

Massachusetts Substance List - Teratogen with sufficient evidence of risk in humans

New Jersey Special Health Hazard Substance List (0.1% reporting limit)

Pennsylvania Environmental Hazard List

California Proposition 65: Acceptable intake level is 0.5 ug/day

WARNING: Contains lead, a substance known to the State of California to cause developmental and reproductive toxicity.

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# SECTION XV - REGULATORY INFORMATION

## **International Regulations:**

This material (or each component) is listed on the following inventories:

Canada - DSL EU - EINECS Australia - AICS

Korea - ECL

Philippines - PICCS

China - List I

Canadian Disclosure List (1%)- Antimony trioxide

Canadian Disclosure List (0.1%)- Arsenic Canadian Disclosure List (0.1%)- Lead

Canadian WHMIS Hazard Class and Division = D.2.a, D.2.b

**SARA Hazards:** 

Acute: Yes Reactive: No Pressure: No Chronic: Fire:

Additional Information

The above regulatory information represents only selected regulations and is not meant to be a complete list.

# **SECTION XVI - OTHER INFORMATION**

NFPA Codes:

Health: 2 Flammability: 0
Reactivity: 0 Other: N
Codes: \* indicates chronic health hazard.

HMIS Codes:

Health:

\* indicates chronic health hazard.

Flammability:

Health: $2^*$ Flammability:0Reactivity:0Protection:X

Label Statements: DANGER. CONTAINS INORGANIC ARSENIC. CANCER HAZARD.

HARMFUL IF INHALED OR SWALLOWED. USE ONLY WITH ADEQUATE VENTILATION OR RESPIRATORY PROTECTION.

Yes

No

Other Information: Abbreviations:

(L) = Loose bulk density in g/ml

LOEC = Lowest observed effect concentration
MATC = Maximum acceptable toxicant concentration

NA = Not available N/A = Not applicable NL = Not limited

NOAEL = No observable adverse effect level NOEC = No observed effect concentration

NOEL = No observable effect level

NR = Not rated

(P) = Packed bulk density in g/ml

PNOC = Particulates Not Otherwise Classified PNOR = Particulates Not Otherwise Regulated

REL = Recommended exposure limit

TS = Trade secret

## Additional Information

Information on this form is furnished solely for the purpose of compliance with OSHA's Hazard Communication Standard, 29CFR 1910.1200 and The Canadian Environmental Protection Act, Canada Gazette Part II, Vol. 122, No. 2 and shall not be used for any other purpose.