SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**UltraFine® II**		
Manufacturer:	GLCC Laurel, LLC		
Address:	P.O. Box 2200	**City:**	West Lafayette
State:	Indiana	**Zip:**	47996-2200
Emergency Telephone Number:	**1-800-949-5167**		
Information Telephone Number:	1-765-497-6100	**Fax:**	1-765-497-6123
Chemtrec Phone:	**1-800-424-9300; Internationally call 703-527-3887**		
Effective Date:	08/13/2004	**Supercede Date:**	None
MSDS Prepared By:	Regulatory Affairs Department/Great Lakes Chemical Corporation		
Synonyms:	Antimony trioxide; Antimony sesquioxide; Antimony (3+) oxide		
Product Use:	Flame Retardant		
Chemical Name:	Antimony oxide		
Chemical Family:	Metal oxide		

Additional Information

No information available

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NO.	%	EXPOSURE LIMITS
Antimony trioxide	1309644	> or = 99.4	Y (Hazardous) 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	0.3 max.	Y (Hazardous) 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)
Lead	7439921	0.2 max.	Y (Hazardous) 0.05 mg/m3 (OSHA PEL TWA) Not established (OSHA PEL STEL) Not established (OSHA PEL CEIL) 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:
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/m3 (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: Ingestion, inhalation and skin absorption

Signs and Symptoms of Overexposure:
General reddening and irritation to the skin and eyes, mucous membrane irritation, upper respiratory tract irritation.
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: Causes eye irritation.

Skin: 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.

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 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,

SECTION III - HAZARDS IDENTIFICATION

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
OSHA:	Yes		

Additional Information

No information available

SECTION IV - FIRST AID MEASURES

Eyes:	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 available
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:	Non-flammable solid
Known or Anticipated Hazardous Products of Combustion:	Oxides of antimony Oxides of arsenic Oxides of lead

Additional Information

No information available

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.

Additional Information

No information available

SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

Appearance:	White powder	**Percent Volatile:**	Not available
Boiling Point:	1425 degrees C	**pH Value:**	Not available
Bulk Density:	Not available	**pH Concentration:**	Not available
Color:	White	**Physical State:**	Solid
Decomposition Temperature:	Not available	**Reactivity in Water:**	Not water reactive
Evaporation Rate:	Not available	**Saturated Vapor Concentration:**	Not available
Freezing Point:	Not available	**Softening Point:**	Not available
Heat Value:	Not available	**Solubility in Water:**	3.3 mg/L

SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

Melting Point:	655 degrees C	**Specific Gravity or Density (Water=1):**	5.5
Molecular/Chemical Formula:	Sb2O3	**Vapor Density:**	Not available
Molecular Weight:	291.52	**Vapor Pressure:**	Not available
Octanol/Water Partition Coefficient:	Not available	**Viscosity:**	Not available
Odor:	No odor	**Volatile Organic Compounds:**	Not available
Odor Threshold:	Not available	**Water/Oil Distribution Coefficient:**	Not available
Particle Size:	Not available	**Weight Per Gallon:**	Not available

Additional Information

Heat of Fusion: 46.3 cal/g
Heat Capacity: 24.11 CAL/G-ATOM/DEG C (at 21 degrees C)
Index of Refraction 2.087

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
Oxides of arsenic
Oxides of lead
Hazardous Polymerization: Will not occur
Conditions to Avoid: None

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
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.

Additional Information

No information available

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.

SECTION XII - ECOLOGICAL INFORMATION

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. DOT

Proper Shipping Name:	Not regulated for containers less than 300 lb. For containers 300-1,005 lb: Environmentally hazardous substances, solid, n.o.s. (Contains Arsenic) See Additional Information.		
Hazard Class:	9	**ID Number:**	UN3077
Packing Group:	III	**Labels:**	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:	A	**Other Stowage:**	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 - Cargo:**	N/A
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
Medical First Aid Guide Code:	N/A		

Additional Information

For containers 1,006-4,999 lb:
Environmentally hazardous substances, solid, n.o.s. (Contains Arsenic and Antimony Trioxide)
For containers 5,000 lb or greater:
Environmentally hazardous substances, solid, n.o.s. (Contains Arsenic, Lead and Antimony Trioxide)

CERCLA RQs:
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.

International Regulations:
This material (or each component) is listed on the following inventories:
Canada - DSL
EU - EINECS
Australia - AICS
Japan - ENCS
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

SECTION XV - REGULATORY INFORMATION

SARA Hazards:

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

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

HMIS Codes: * indicates chronic health hazard.

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

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

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.