

57G, 158F, G, Q

MATERIAL SAFETY DATA SHEET

SECTION 1 – PRODUCT AND SUPPLIER IDENTIFICATION

PRODUCT: FOREST GREEN GELCOAT

MSDS PREPARATION DATE: February 23, 2005

SUPPLIER: FIBERLAY, Inc.
 ADDRESS: 2425 N.W. Market Street
 Seattle, WA 98107

TELEPHONE: (206) 782-0660
 EMERGENCY TELEPHONE NUMBER: (800) 451-8346 (3E Company)

SECTION 2 – INGREDIENTS

Component	% (w/w)	CAS Number	Exposure Limits
Unsaturated Polyester Resin	20-40	Proprietary	None Established
Styrene Monomer	33-37	100-42-5	OSHA PEL/TWA: 50 PPM (8 Hr TWA) OSHA PEL/Ceiling: Acceptable Max. Peak: 600 PPM (5 Min in any 3 Hrs) OSHA PEL/STEL: Acceptable Concentration: 200 PPM (15 Min TWA) ACGIH TLV/TWA: 20 PPM (85 Mg/Cu.M.) ACGIH TLV/STEL: 40 PPM (170 Mg/Cu.M.) LD50, Oral: 4.37 gm/Kg (Rat) LD50, Dermal: >5 gm/Kg (Rabbit) IARC - Group 2B (Possible)
Talc (Hydrous Magnesium Silicate)	0-20	014807-96-6	ACGIH TLV/TWA: 2 Mg/Cu.M. Respirable Dust OSHA PEL/TWA: 2 Mg/Cu.M. Respirable Dust LD50, Oral: NOT AVAILABLE LD50, Dermal: NOT AVAILABLE LC50, Inhalation: NOT AVAILABLE

Component	% (w/w)	CAS Number	Exposure Limits
Calcium Carbonate	0-20	1317-65-3	OSHA PEL/TWA: 5.000 Mg/Cu.M. Respirable Dust OSHA PEL/TWA: 15.000 Mg/Cu.M. Total Dust OSHA VPEL/TWA: 5.000 Mg/Cu.M. Respirable Dust OSHA VPEL/TWA: 15.000 Mg/Cu.M. Total Dust ACGIH TLV/TWA: 10.000 Mg/Cu.M.
Quartz	0-1	14808-60-7	OSHA PEL/TWA: 10.000 Mg/Cu.M. Respirable Dust OSHA PEL/TWA: 30.000 Mg/Cu.M. Total Dust OSHA VPEL/TWA: 0.100 Mg/Cu.M. Respirable Dust ACGIH TLV/TWA: 0.050 Mg/Cu.M
Crystalline Free Silica	0-20	112945-52-5	None Established
Precipitated Silica Gel – Crystalline Free	0-20	112926-00-8	OSHA PEL/TWA: 0.000 Mg/Cu.M. OSHA VPEL/TWA: 6.000 Mg/Cu.M. ACGIH TLV/TWA: 10.000 Mg/Cu.M.
Methyl Methacrylate	4	80-62-6	ACGIH TLV/TWA: 100 PPM (410 Mg/Cu.M.) OSHA PEL/TWA: 100 PPM (410 Mg/Cu.M.) LD50, Oral: 7.9 gm/Kg (Rat) LD50, Dermal: 35.5 gm/Kg (Rabbit) LC50, Inhalation: >12,500 PPM/0.5 Hr (Rat)
Phthalo Green Pigment C.I. Pigment Green 7	1-5	1328-53-6	OSHA PEL/TWA: 1 Mg/Cu.M. (as Cu) ACGIH TLV/TWA: 1 Mg/Cu.M. (as Cu)
Light Chrome Yellow Pigment (C.I. Pigment Yellow 34 – Lead sulfochromate)	0-1	001344-37-2	OSHA PEL/TWA: 0.05 Mg/Cu.M. Pb ACGIH TLV/TWA: 0.012 Mg/Cu.M. Cr
Titanium Dioxide	0-1	013463-67-7	ACGIH TLV/TWA: 10 Mg/Cu.M. (Total Dust) OSHA PEL/TWA: 15 Mg/Cu.M. (Total Dust) LD50, Oral: >7500 Mg/Kg (Rat) LD50, Dermal: NOT AVAILABLE LC50, Inhalation: NOT AVAILABLE
Carbon Black	0-1	001333-86-4	OSHA PEL/TWA: 3.5 Mg/Cu. M.
Phthalo Blue Pigment C.I. Pigment Blue 15	0-1	000147-14-8	OSHA PEL/TWA: 1 Mg/Cu.M. (as Cu) ACGIH TLV/TWA: 1 Mg/Cu.M. (as Cu)
Cobalt Compounds	0.1- 0.5	N/A	None Established

SECTION 3 - HAZARDS IDENTIFICATION

EFFECTS OF EXCESSIVE OVEREXPOSURE.

PRIMARY ROUTES OF ENTRY ARE:

EYE: CONTACT:

Irritation. Symptoms may include stinging, tearing, redness and discomfort.

SKIN CONTACT:

Irritation. Prolonged or repeated exposure may dry the skin. Symptoms may include redness, burning, drying and cracking, skin burns and skin damage. Skin absorption is possible but harmful effects are not expected from this route of exposure under normal conditions of handling and use. Prolonged or repeated exposure to methyl methacrylate can cause skin sensitization.

INHALATION:

Irritation to nose and throat. Extended or repeated exposure to concentrations above the recommended exposure limits may cause brain or nervous system depression, with symptoms such as dizziness, headache or nausea and if continued indefinitely, loss of consciousness, liver and kidney damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

INGESTION:

Single dose oral toxicity is low. Swallowing small amounts during normal handling is not likely to cause harmful effects; swallowing large amounts may be harmful. This material can enter the lungs during swallowing or vomiting and cause lung inflammation and/or damage. May cause mouth, throat, esophagus and stomach irritation, nausea, vomiting and diarrhea.

GENERAL:

Lead and Lead compounds are cumulative poisons; blood levels can increase with repeated exposure causing blood, kidney, liver, reproductive, developmental and nervous system effects. Symptoms may include abdominal discomfort or pain, nausea, diarrhea, loss of appetite, dizziness, lassitude, lack of coordination and insomnia.

Lead chromate is listed as a suspect human carcinogen by IARC (Group 2B). However, recent toxicity data indicate that Lead chromate pigments are non-carcinogenic or at least show extremely low carcinogenic potential based on lung implantation studies on rats.

Furthermore, Lead chromate pigments do not show an increase in lung cancer rates according to epidemiological studies of workers in factories that produce only Lead chromate pigments.

CHRONIC EFFECTS:

Repeated or prolonged exposure to styrene may cause nausea, loss of appetite, CNS depression and general weakness.

MEDICAL CONDITIONS THAT MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT:

Preexisting eye, skin, liver, kidney and respiratory disorders.

TARGET ORGANS:

Overexposure to styrene has been suggested as a cause of the following effects in laboratory animals, and may aggravate pre-existing disorders of these organs in humans: mild, reversible kidney effects, effects on hearing, respiratory tract damage, testis damage, central nervous system effects, mild effects on color vision or liver damage.

OTHER HEALTH HAZARDS: STYRENE MONOMER

The International Agency for Research on Cancer (IARC) has reclassified styrene as Group 2B "possibly carcinogenic to humans". This new classification is not based on new health data relating to either humans or animals, but on a change in the IARC classification system.

The Styrene Information and Research Center does not agree with the reclassification and has published the following statement. "Recently published studies tracing 50,000 workers exposed to high occupational levels of styrene over a period of 45 years showed no association between styrene and cancer, no increase in cancer among styrene workers (as opposed to the average among all workers), and no increase in mortality related to styrene." An increased incidence of lung tumors was observed in mice from a recent inhalation study. The relevance of this finding is uncertain. Data from other long-term animal studies and from epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic. Lung effects have been observed in the mouse following repeated exposure to styrene.

OTHER HEALTH HAZARDS: METHYL METHACRYLATE

Skin exposure to methyl methacrylate may cause irritation and/or a rash; it is also a potential skin sensitizer. Prolonged or repeated overexposure at near lethal concentrations can cause liver and kidney damage.

SECTION 4 – FIRST AID MEASURES

EYE CONTACT:

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

SKIN CONTACT:

Remove contaminated clothing. Flush exposed area with large amounts of water and then wash thoroughly with soap and water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

INHALATION:

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

INGESTION:

Do not induce vomiting. This material is an aspiration hazard. If individual is drowsy or unconscious, place on left side with the head down. Seek medical attention. If possible, do not leave individual unattended.

SECTION 5 – FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CHARACTERISTICS:

Lowest Closed Cup Flashpoint: 82.0 degrees F

For Flash Points 73 to 100 deg. F.

OSHA Flammability Classification: Class IC

DOT Flammability Classification: Flammable Liquid

Lower Flammable Limit in Air: 1.1 % by volume

Upper Flammable Limit in Air: 12.5 % by volume

EXTINGUISHING MEDIA:

Use Foam, carbon dioxide, dry chemical. Use water spray/water fog for cooling.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

If polymerization takes place in a container, there is possibility of violent rupture of the container. Vapors are uninhibited and may form polymers in vents or flame arrestors of storage tanks resulting in stoppage of vents. Vapors may cause flash fire. Keep containers tightly closed and isolate from

heat, electrical equipment, sparks and flame. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

SPECIAL FIRE FIGHTING PROCEDURES:

Full protective equipment including self-contained breathing apparatus should be used. Do not enter fire area without proper protection. Fight fire from a safe distance/protected location. Heat/impurities may increase temperature, build pressure and rupture closed containers spreading fire, increasing risk of burns and injuries. Water spray may be ineffective due to low solubility. Pressure relief system may plug with solids, increasing the risk of overpressure. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible auto-ignition or explosion when exposed to extreme heat. Notify authorities immediately if liquid enters sewer or public waters.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Eliminate all ignition sources such as flares, flames (including pilot lights), hot surfaces and any electrical sparks. Avoid breathing vapors. Ventilate area. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump, vacuum or scoop spilled product into clean containers for disposal. Use non-sparking tools. Sand, floor absorbent or other inert absorbent may be used to absorb material and aid in preventing the spread of the material. In case of a large spill, persons not wearing protective equipment should be excluded from the area until cleanup has been completed.

SECTION 7 – HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Do not store above 100 deg. F. Store large quantities in buildings designed to comply with OSHA 1910.106. Keep away from heat, sparks and flame. Store containers closed and upright to prevent leaks.

OTHER PRECAUTIONS:

Containers should be grounded and/or bonded when pouring. Emptied containers may retain hazardous residue and explosive vapors. Keep away from heat, sparks and flames and direct sunlight. Do not cut, puncture or weld on or near emptied containers. Follow all hazard precautions given in this data sheet until container is thoroughly cleaned or destroyed. If this product is blended with other components such as thinners, converter, colorants and catalysts prior to use, read all warning labels. Any mixture of components will have hazards of all components. Follow all precautions. If spraying this material, keep spray booths clean. Avoid buildup of spray dust or overspray in booths or ducts. Do not take internally. Wash hands after using and before smoking or eating.

KEEP OUT OF REACH OF CHILDREN - FOR INDUSTRIAL USE ONLY!

SECTION 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

RESPIRATORY PROTECTION:

Do not breathe or ingest vapors, spray mist or dust while applying, sanding, grinding, or sawing cured product. Wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during application and other use of this product until vapors, mists and dusts are exhausted, unless air monitoring demonstrates vapor, mist and dust levels are below applicable limits. Half-face, air

purifying, organic vapor cartridge respirator can be used up to 400 PPM exposure. A full-face, air purifying, organic vapor cartridge respirator can be used up to 1000 PPM for short-term periods depending on respirator cartridge use efficiency. Higher concentrations would require full-face, positive pressure, supplied air or self-contained breathing apparatus. Follow respirator manufacturer's directions for respirator use. Observe OSHA Standard 29 CFR 1910.134.

VENTILATION:

Provide general clean air dilution or local exhaust ventilation in volume and pattern to keep the air contaminant concentration below the lower explosion limit and below current applicable exposure limits in the mixing, application and curing areas; and to remove decomposition product during welding and flame cutting on surfaces coated with this product. In confined areas, use only with forced ventilation adequate to keep vapor concentration below 20% of lower explosion limits. Refer to OSHA Standards 29 CFR 1910.94, 1910.107, 1910.108.

NOTE: Heavy solvent vapors should be removed from lower levels of the work area and all ignition sources (non-explosion-proof motors, etc.) should be eliminated.

PROTECTIVE GLOVES:

Use solvent impermeable gloves such as polyethylene, natural rubber, neoprene, buna-N or nitrile to avoid contact with product.

EYE PROTECTION:

Do not get in eyes. Use safety eyewear with splash guards or side shields, chemical goggles or face shields that meet OSHA regulations.

OTHER PROTECTIVE EQUIPMENT:

Avoid contact with skin. Use protective clothing. Prevent contact with contaminated clothing. Wash contaminated clothing, including shoes, before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Range:	Low = 214.0 °F	High = 295.0 °F
Freezing Point:	N/A	
Vapor Pressure:	29.000 mm/Hg @ 68 °F	
Vapor Density:	3.60	
Specific Gravity:	1.22 (10.2 LB/GL – Calculated)	
Evaporation Rate:	3.000 (n-Butyl Acetate = 1)	
%Volatile by Weight:	33-37	
%Volatile by Volume:	48-55	
Physical State:	LIQUID	
Appearance:	DARK GREEN	
Odor:	MODERATE AROMATIC	
pH:	N/A	
Water Solubility:	INSOLUBLE	

SECTION 10 – STABILITY AND REACTIVITY

STABILITY:

This product is stable under normal conditions

HAZARDOUS POLYMERIZATION:

Is not expected but may occur.

CONDITIONS TO AVOID:

Elevated temperatures, heat, sparks, open flame and other ignition sources. Improper addition of promoter and/or catalyst. Avoid direct contact of MEKP catalyst with accelerator. If an accelerator such as cobalt drier is to be added, mix this accelerator with base material before adding catalyst.

INCOMPATIBILITY (MATERIALS TO AVOID):

Oxidizers, peroxides, strong acids, other oxidizing agents, organic metal soaps, aluminum chloride and vinyl polymers.

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition or combustion can produce fumes containing organic acids, carbon dioxide, carbon monoxide, other toxic gases and acrid smoke.

SECTION 11 – TOXICOLOGICAL INFORMATION

GELCOAT PRODUCT TOXICOLOGICAL INFORMATION:

EYE EFFECTS:

No Data

SKIN EFFECTS:

No Data

INHALATION EFFECTS:

No Data

ORAL (INGESTION) EFFECTS:

No Data

INDIVIDUAL INGREDIENT TOXICOLOGICAL INFORMATION: SEE SECTION 2

SECTION 12 – ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

Styrene and Methyl Methacrylate are classified as Hazardous Air Pollutants (HAP). Both react when the product cures and only a portion is lost as Volatile Organic Compounds (VOC). The VOC quantity listed in SECTION 9 is a total theoretical loss value. Under typical conditions, only half this amount might be lost to the atmosphere. The loss will vary due to temperature, humidity, film thickness, air movement, spray equipment, techniques, catalyzation, gel and cure rates, etc. If precise values are needed, it is suggested that on-site testing be conducted.

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL;

Whatever cannot be saved for recovery or re-use should be handled as hazardous waste in accordance with 40 CFR Part 261.21(a)(1) and classified as a D001 Ignitable Waste. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of in accordance with local, state and federal regulations. Incinerate in an approved facility.

SECTION 14 – TRANSPORT INFORMATION

DOT Shipping Name:	Resin Solution
DOT Hazard Class:	3
DOT Identification Number	UN1866
DOT Packaging Group:	III
DOT Label	Flammable Liquid
DOT Placard:	UN1866 Placard is required if container volume exceeds 119 gallons.

RQ – Styrene 1000 LBS
RQ – Methyl Methacrylate 1000 LBS

SECTION 15 – REGULATORY INFORMATION

FEDERAL REGULATIONS:

TSCA (Toxic Substances Control Act) – United States – The intentional ingredients of this product are listed.

CLEAN AIR ACT SECTION 112:

This product contains the following components listed as Hazardous Air Pollutants:

LEAD COMPOUNDS	CAS# N/A	Percent Weight: 0.0500
CHROMIUM COMPOUNDS	CAS# N/A	Percent Weight: 0.0500

SARA TITLE III:

SARA 302 Components – 40 CFR 355 Appendix A - None

SARA 311/312 Hazard Class – 40 CFR 370.2

Immediate (X) Delayed (X) Fire (X) Reactive (X)

Sudden Release of Pressure ()

SARA 313 INFORMATION:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372:

METHYL METHACRYLATE

CAS# 000080-62-6 Percent by Weight: 4.0000

STYRENE MONOMER

CAS# 000100-42-5 Percent by Weight: 33-37

COPPER COMPOUNDS	CAS# N/A	Percent Weight: 0.9300
------------------	----------	------------------------

LEAD COMPOUNDS	CAS# N/A	Percent Weight: 0.0500
----------------	----------	------------------------

CHROMIUM COMPOUNDS	CAS# N/A	Percent Weight: 0.0500
--------------------	----------	------------------------

CERCLA RQ – 40 CFR 302.4(a)

Styrene	1000 LBS
---------	----------

Methyl Methacrylate	1000 LBS
---------------------	----------

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65 INFORMATION:

WARNING - This product contains a chemical(s) known to the State of California to cause cancer and/or birth defects.

Styrene may contain up to 2 PPM of benzene as a contaminant. Styrene can react in the presence of air to form styrene oxide. Benzene and styrene oxide are chemicals known to the state of California to cause cancer and/or birth defects.

This product contains the following substances known to the State of California to cause cancer:

C.I. Pigment Yellow 34 (Lead sulfochromate)

This product contains the following substances known to the State of California to cause adverse reproductive effects:

C.I. Pigment Yellow 34 (Lead sulfochromate)

CANADIAN WHMIS CLASSIFICATION: B2/D1A/F

HAP CONTENT:

The HAP content and VOC content of this product are not necessarily the same. The HAP content can be determined by adding together any styrene and methyl methacrylate (listed in SECTION 2). The result is the HAP content in weight percent.

SECTION 16 – OTHER INFORMATION

NFPA RATINGS:

Health: 2 Flammability: 3 Reactivity: 1

NPCA HMIS INFORMATION:

Health: 2 Flammability: 3 Reactivity: 1 Personal Protective Equipment: I

PREPARATION DATE: February 23, 2005

PREPARED BY: David L. Ellsworth

REVISIONS: None

The information contained herein is information received from our raw material suppliers and other sources and is believed to be reliable and accurate. This data or information is not to be taken as a warranty for which FIBERLAY, INC. assumes legal responsibility.
