

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	FlakeRez 304 Fluoride Resistant Coating - Resin/Side A
Version #	1.0
Revision date	20-Jun-2008
Company information	PolySpec 6614 Gant Road Houston, TX 77066 US
Emergency	Chemtrec (800) 424-9300 International (703) 527-3887

2. COMPOSITION / INFORMATION ON INGREDIENTS

Component(s)	CAS #	Percent
Styrene	100-42-5	< 40
Graphite	7782-42-5	< 20
Titanium dioxide	13463-67-7	< 10
Crystalline Silica	14808-60-7	< 1
Non-hazardous and other components below reportable levels		> 60

3. HAZARDS IDENTIFICATION

Emergency overview Highly flammable. In use, may form flammable/explosive vapor-air mixture. Irritating to skin. Irritating to respiratory system. Harmful in contact with eyes.

Danger of serious damage to health by prolonged exposure. May cause cancer. May cause breathing disorders and lung damage. Will be easily ignited by heat, spark or flames. May cause brain and central nervous system damage. Can cause adverse reproductive effects.

Potential short term health effects

Eyes	Contact may irritate or burn eyes. Eye contact may result in corneal injury.
Skin	Components of the product may be absorbed into the body through the skin. Irritating to skin.
Inhalation	May cause breathing disorders and lung damage. Irritating to respiratory system.
Ingestion	Do not ingest.
Target organs	Central nervous system. Eyes. Liver. Lungs. Respiratory system. Skin.
Main symptoms	Chronic exposure to neurotoxins damages the brain and the central nervous system. Liver injury may occur.

4. FIRST AID MEASURES

First aid

Eye contact	Immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention immediately. Get medical attention if irritation develops or persists.
Skin contact	Remove and isolate contaminated clothing and shoes. Immediately flush skin with running water for at least 20 minutes. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash off immediately with plenty of water. If skin irritation persists, call a physician.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Get medical attention immediately. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, give oxygen. Get medical attention, if needed.
Ingestion	Do not induce vomiting without medical advice. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not use mouth-to-mouth method if victim ingested the substance. If material is ingested, immediately contact a physician or poison control center. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Drink plenty of water.
Notes to physician	Symptoms may be delayed.

General advice Keep victim warm. In case of shortness of breath, give oxygen. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Keep victim under observation.

5. FIRE FIGHTING MEASURES

Unusual fire & explosion hazards Runoff to sewer may cause fire or explosion hazard. Containers may explode when heated. Vapors form flammable or explosive mixtures with air at room temperature. Vapor or gas may spread to distant ignition sources and flash back.

Hazardous combustion products Fire may produce irritating, corrosive and/or toxic gases. Irritating and toxic gases or fumes may be released during a fire.

Suitable extinguishing media Carbon dioxide (CO₂). Dry chemical. Foam. Water may be an ineffective extinguishing medium.

Fire fighting equipment/instructions Move containers from fire area if you can do it without risk. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. ALWAYS stay away from tanks engulfed in flame. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. In the event of fire, wear self contained breathing apparatus.

Extinguishing media which must not be used for safety reason Water may be ineffective.

Flash point 80 °F (26.7 °C) Pensky-Martens Closed Cup

6. ACCIDENTAL RELEASE MEASURES

Evacuation procedures Keep unnecessary personnel away. Ventilate closed spaces before entering. Stay upwind. Keep out of low areas.

Containment procedures Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop the flow of material, if this is without risk. Prevent entry into waterways, sewers, basements or confined areas. Dike the spilled material, where this is possible.

Personal precautions Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for cleaning up Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Dike far ahead of liquid spill for later disposal. Avoid dust formation. Never return spills in original containers for re-use. Should not be released into the environment.

7. HANDLING AND STORAGE

Handling Do not handle or store near an open flame, heat or other sources of ignition. Do not breathe gas/fumes/vapor/spray. All equipment used when handling the product must be grounded. Vapors may form explosive mixtures with air. Heat only in areas with appropriate exhaust ventilation. Wear personal protective equipment. Avoid contact with eyes. Surfaces may become slippery after spillage.

Storage Keep in a cool, well-ventilated place. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. The pressure in sealed containers can increase under the influence of heat. Keep away from heat and sources of ignition. Keep container tightly closed. Keep out of the reach of children. Do not freeze.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

ACGIH - Threshold Limits Values - Short Term Exposure Limits (TLV-STEL)

Styrene 100-42-5 40 Ppm STEL

ACGIH - Threshold Limits Values - Time Weighted Averages (TLV-TWA)

Crystalline Silica 14808-60-7 0.05 Mg/m³ TWA (respirable fraction)

Graphite 7782-42-5 2 Mg/m³ TWA (respirable fraction, all forms except graphite fibers)

Styrene 100-42-5 20 Ppm TWA

Titanium dioxide 13463-67-7 10 Mg/m³ TWA

ACGIH - Threshold Limits Values - TLV Basis - Critical Effects

Crystalline Silica 14808-60-7 silicosis; lung function; lung fibrosis; cancer

Graphite 7782-42-5 pneumoconiosis (all forms except graphite fibers)

Styrene 100-42-5 Neurotoxicity; irritation; CNS

Titanium dioxide 13463-67-7 lung

OSHA - Final PELs - Ceiling Limits

Styrene 100-42-5 200 Ppm Ceiling

OSHA - Final PELs - Time Weighted Averages (TWAs)

Styrene 100-42-5 100 Ppm TWA

Titanium dioxide 13463-67-7 15 Mg/m³ TWA (total dust)

Personal protective equipment

Respiratory protection

A NIOSH- approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Hand protection

Protective gloves.

Eye protection

Wear chemical goggles. Face-shield.

Skin and body protection

Wear suitable protective clothing. Wear appropriate chemical resistant clothing.

General

Structural firefighters protective clothing will only provide limited protection. Avoid contact with the skin and the eyes.

Engineering measures to reduce exposure

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Hygiene measures

When using do not smoke. Handle in accordance with good industrial hygiene and safety practice. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice for diagnostics. Avoid contact with the skin and the eyes.

9. PHYSICAL & CHEMICAL PROPERTIES

Density 9.8294 lb/gal

Form Liquid.

Specific gravity 1.18

10. CHEMICAL STABILITY & REACTIVITY INFORMATION

Stability Risk of ignition.

Conditions to avoid Heat, flames and sparks. Vapors may form explosive mixture with air.

Hazardous polymerization Will not occur.

Incompatibility Chlorine. Fluoride. Fluorine. Peroxides. Strong acids. Strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

Local effects Liver toxicity. Risk of serious damage to eyes. Components of the product may be absorbed into the body through the skin. Irritating to respiratory system. Irritating to skin.

Component analysis - LD50

NIOSH - Selected LD50s and LC50s

Styrene 100-42-5 Inhalation LC50 Rat: 12 g/m³/4H; Inhalation LC50 Mouse: 9500 mg/m³/4H; Oral LD50 Rat: 2650 mg/kg; Oral LD50 Mouse: 316 mg/kg

Carcinogenicity

Cancer hazard.

ACGIH - Threshold Limits Values - Carcinogens

Crystalline Silica 14808-60-7 A2 - Suspected Human Carcinogen

Styrene 100-42-5 A4 - Not Classifiable as a Human Carcinogen

Titanium dioxide 13463-67-7 A4 - Not Classifiable as a Human Carcinogen

NTP (National Toxicology Program) - Report on Carcinogens - Known Carcinogens

Crystalline Silica 14808-60-7 Known Carcinogen

Reproductivity	Possible reproductive hazard.
Chronic toxicity	Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged or repeated exposure may cause lung injury.
Further information	Symptoms may be delayed. Reproductive toxicity.
Routes of exposure	Inhalation. Skin contact.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Components of this product are hazardous to aquatic life.	
Environmental effects	Harmful to aquatic life.	
Ecotoxicity - Freshwater Fish Species Data		
Styrene	100-42-5	96 Hr LC50 fathead minnow: 4.02 mg/L (flow-through);96 Hr LC50 bluegill: 25.05 mg/L (Static);96 Hr LC50 goldfish: 64.74 mg/L (Static)
Ecotoxicity - Microtox Data		
Styrene	100-42-5	5 Min EC50 Photobacterium phosphoreum: 5.4 mg/L
Ecotoxicity - Water Flea Data		
Styrene	100-42-5	48 Hr EC50 water flea: 23.0 mg/L

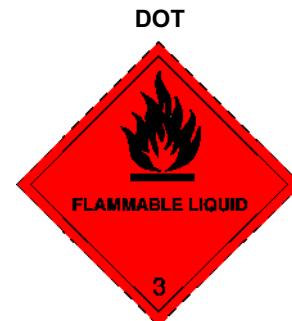
13. DISPOSAL CONSIDERATIONS

Waste codes	D001: Waste Flammable material with a flash point <140 F
Disposal instructions	Dispose in accordance with all applicable regulations. Consult authorities before disposal. If discarded, this product is considered a RCRA ignitable waste, D001. Incinerate the material under controlled conditions in an approved incinerator. Dispose of this material and its container at hazardous or special waste collection point. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

14. TRANSPORTATION INFORMATION

Department of Transportation (DOT) Requirements

Proper shipping name	PAINT RELATED MATERIAL
Hazard class	3
Special provisions	B1, B52, IB3, T2, TP1
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242
Quantity limits passenger	60 L
Quantity limits cargo	220 L
Vessel stowage location	A
UN number	UN1263
Packaging group	III
Labels required	3
ERG number	128



International Air Transport Association (IATA) Requirements

Proper shipping name	PAINT RELATED MATERIAL
Hazard class	3
Special provisions	B1, B52, IB3, T2, TP1
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242
Quantity limits passenger	60 L
Quantity limits cargo	220 L
Vessel stowage location	A
UN number	UN1263
Packaging group	III
Labels required	3
Passenger Cargo Pkg Inst LQ	Y309 309
Packaging Instructions	310
Pkg Inst Cargo Only	

IATA



International Maritime Dangerous Goods (IMDG) Code Requirements

Proper shipping name	PAINT
Hazard class	3
Special provisions	163, 640E
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242
Quantity limits passenger	60 L
Quantity limits cargo	220 L
Vessel stowage location	A
Item	F1
UN number	UN1263
Packaging group	III
Labels required	3
Hazard ID	30
Transport Category	3

IMDG



15. REGULATORY INFORMATION

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA/SARA - Section 313 - Emission Reporting

Styrene 100-42-5 0.1 % de minimis concentration

Inventory - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

Crystalline Silica	14808-60-7	238-878-4
Graphite	7782-42-5	231-955-3
Styrene	100-42-5	202-851-5
Titanium dioxide	13463-67-7	236-675-5

Inventory - United States - Section 8(b) Inventory (TSCA)

Crystalline Silica	14808-60-7	Present
Graphite	7782-42-5	Present
Styrene	100-42-5	Present
Titanium dioxide	13463-67-7	Present

Occupational safety and health administration (OSHA)

29 CFR 1910.1200 Yes
hazardous chemical

CERCLA (superfund) reportable quantity

DMA: 100.0000

Superfund amendments and reauthorization act of 1986 (SARA)

Section 302 extremely No
hazardous substance

Section 311 hazardous chemical Yes

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

NFPA ratings Health: 2
Flammability: 3
Instability: 0

International regulations

Canada - 2004 NPRI (National Pollutant Release Inventory)

Styrene 100-42-5 Part 1, Group 1 Substance; Part 5 Substance

Canada - WHMIS - Ingredient Disclosure List

Crystalline Silica 14808-60-7 1 % (English Item 1406, French Item 1491)

Styrene 100-42-5 0.1 % (English Item 1473, French Item 1508)

State regulations

California - Proposition 65 - Carcinogens List

Crystalline Silica 14808-60-7 carcinogen, initial date 10/1/88 (airborne particles of respirable size)

Massachusetts - Right To Know List

Crystalline Silica 14808-60-7 Carcinogen; Extraordinarily hazardous

Graphite 7782-42-5 Present; Exempt when encapsulated or if particulates are not present and cannot be substantially generated through use of the product.

Styrene 100-42-5 Carcinogen; Extraordinarily hazardous

Titanium dioxide 13463-67-7 Present

New Jersey - Right to Know Hazardous Substance List

Crystalline Silica 14808-60-7 sn 1660

Styrene 100-42-5 sn 1748

Titanium dioxide 13463-67-7 sn 1861

Pennsylvania - RTK (Right to Know) List

Crystalline Silica 14808-60-7 Present as well as its dust

Graphite 7782-42-5 Present

Styrene 100-42-5 Environmental hazard

Titanium dioxide 13463-67-7 Present

16. OTHER INFORMATION

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.

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