



SAFETY DATA SHEET

1. Identification

Product identifier DuraLyte®
Other means of identification
Product code D04LR
Recommended use Fire retardant insulative foam.
Recommended restrictions Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer Epsilyte, LLC
Address 555 East Statler Rd
Piqua, Oh 45356
United States
Telephone 937-778-9500
Emergency Telephone Number (CHEMTREC US) 1-800-424-9300 (24 hour emergency assistance)

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Not classified.
OSHA defined hazards Combustible dust

Label elements

Hazard symbol None.
Signal word Warning
Hazard statement May form combustible dust concentrations in air.
Precautionary statement

Prevention Prevent dust accumulation to minimize explosion hazard. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Observe good industrial hygiene practices.
Response Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage Not assigned.
Disposal Not assigned.

Hazard(s) not otherwise classified (HNOC) Repeated exposure may cause skin dryness or cracking.

Supplemental information In use, material may release pentanes, a flammable hydrocarbon, which may form a flammable/explosive vapor-air mixture.
Molten material will produce thermal burns.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Polystyrene	9003-53-6	86 - 90
Graphite Powder	7782-42-5	5 - 10
Pentanes (all Isomers)	Mixture	2 - 8
Modifiers and/or Additives	Proprietary	≤ 3

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
The manufacturer has claimed the specific chemical identity and/or exact percentage as trade secret under the OSHA Hazard Communication Standard.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists. If burned by contact with hot material, cool molten material adhering to skin as quickly as possible with water, and see a physician for removal of adhering material and treatment of burn. Do not peel polymer from the skin.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists. If hot material contacts the eye, immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.
Ingestion	Rinse mouth. Do not induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.
Most important symptoms/effects, acute and delayed	Dusts may irritate the respiratory tract, skin and eyes. Mist, vapors and fumes from heated material may cause respiratory tract irritation. Repeated exposure may cause skin dryness or cracking. Contact with molten material may cause thermal burns. May cause gastrointestinal disturbances. In confined or poorly ventilated areas, vapors can readily accumulate and can cause unconsciousness and death.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed. INHALATION: This material (or a component) sensitizes the myocardium to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. Administration of sympathomimetic drugs should be avoided.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). Apply extinguishing media carefully to avoid creating airborne dust.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. In use, material may release pentanes, a flammable hydrocarbon, which may form a flammable/explosive vapor-air mixture. During fire, gases hazardous to health may be formed such as: Carbon oxides (CO, CO ₂), smoke and irritating vapors as products of incomplete combustion. Hydrocarbons.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	May form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid inhalation of dust. Ensure adequate ventilation. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Resin pellets spilled on the floor may cause slippery conditions. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Combustible dust clouds may be created where operations produce fine material (dust). Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Explosion-proof general and local exhaust ventilation.

Avoid inhalation of dust. Avoid contact with eyes, skin, and clothing. Avoid contact with molten material. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and open flame. Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Graphite Powder (CAS 7782-42-5)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
Pentanes (all Isomers)	PEL	2950 mg/m ³	
		1000 ppm	

US. OSHA Table Z-3 Permissible Exposure Limits (PEL) for Mineral Dusts (29 CFR 1910.1000)

Components	Type	Value
Graphite Powder (CAS 7782-42-5)	TWA	15 mppcf

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value	Form
Graphite Powder (CAS 7782-42-5)	TWA	2 mg/m ³	Respirable fraction.
Pentanes (all Isomers)	TWA	1000 ppm	

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
Graphite Powder (CAS 7782-42-5)	IDLH	1250 mg/m ³
Pentanes (all Isomers)	IDLH	1.5 %
		1500 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Graphite Powder (CAS 7782-42-5)	TWA	2.5 mg/m ³	Respirable.
Pentanes (all Isomers)	Ceiling	1800 mg/m ³	
		610 ppm	
	TWA	350 mg/m ³	
		120 ppm	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Use only appropriately classified electrical equipment and powered industrial trucks. Provide eyewash station.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles). Wear a face shield when working with molten material.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. When handling hot material, use heat resistant gloves. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Beads.
Color	Black.
Odor	Hydrocarbon.
Odor threshold	Property has not been measured.
pH	Material is non soluble in water.
Melting point/freezing point	199.94 - 215.06 °F (93.3 - 101.7 °C)
Initial boiling point and boiling range	Not applicable, material is a solid.
Flash point	Not applicable, material is a solid. -60 °F (-51.11 °C) EPS Beads Containing Pentanes
Evaporation rate	Not applicable, material is a solid.
Flammability (solid, gas)	May form combustible dust concentrations in air.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	1.4 % (EPS Beads Containing Pentanes)
Explosive limit - upper (%)	8.3 % (EPS Beads Containing Pentanes)
Vapor pressure	< 100 mmHg (77 °F (25 °C))
Vapor density	Not applicable, material is a solid.
Relative density	Property has not been measured.
Solubility(ies)	
Solubility (water)	Insoluble (<0.1%)

Partition coefficient (n-octanol/water)	Not applicable, product is a mixture.
Auto-ignition temperature	500 °F (260 °C)
Decomposition temperature	Not applicable as the product is not unstable.
Viscosity	Not applicable, material is a solid.
Other information	
Density	Property has not been measured.
Explosive properties	Not explosive.
Kinematic viscosity	Not applicable, material is a solid.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials. Minimize dust generation and accumulation.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
Skin contact	Dust or powder may irritate the skin. Contact with molten material may cause thermal burns.
Eye contact	Dust may irritate the eyes. Molten material will produce thermal burns.
Ingestion	May cause gastrointestinal disturbances.

Symptoms related to the physical, chemical and toxicological characteristics Dusts may irritate the respiratory tract, skin and eyes. Mist, vapors and fumes from heated material may cause respiratory tract irritation. Repeated exposure may cause skin dryness or cracking. Contact with molten material may cause thermal burns. May cause gastrointestinal disturbances. In confined or poorly ventilated areas, vapors can readily accumulate and can cause unconsciousness and death.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Graphite Powder (CAS 7782-42-5)		
Acute		
Oral		
LD50	Rat	> 10000 mg/kg
Pentanes (all Isomers) (CAS Mixture)		
Other		
NOAEL	Rat	> 1000 mg/kg/day
Acute		
Dermal		
LD50	Rabbit	3000 mg/kg/day
Inhalation		
LC50	Rat	18 mg/l, 4 Hours
Oral		
LD50	Rat	> 2000 mg/kg/day
Chronic		
Other		
NOAEL	Rat	20 mg/l

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Polystyrene (CAS 9003-53-6)	3 Not classifiable as to carcinogenicity to humans.
NTP Report on Carcinogens	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product		Species	Test Results
DuraLyte® (CAS Mixture)			
Aquatic			
<i>Acute</i>			
Algae	ErC50	Pseudokirchnerella subcapitata	> 100 mg/l, 72 hours
Crustacea	EC50	Daphnia magna	> 100 mg/l, 48 hours
Fish	LC50	Danio rerio	> 100 mg/l, 96 hours
Components			
Pentanes (all Isomers) (CAS Mixture)			
<i>Acute</i>			
	EC50	Selenastrum capricornutum (new Pseudokirchneriella subcapita	7.51 mg/l, 72 Hours
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia magna	2.7 mg/l, 48 Hours
Fish	LC50	Oncorhynchus mykiss	4.26 mg/l, 96 Hours
Polystyrene (CAS 9003-53-6)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Oryzias latipes	> 500 mg/l, 48 Hours

Persistence and degradability The product is not readily biodegradable.

Bioaccumulative potential Not likely to bioaccumulate in aquatic organisms.

Partition coefficient n-octanol / water (log Kow)

Pentanes (all Isomers) 3.39

Mobility in soil The product is insoluble in water. Expected to have low mobility in soil.

Other adverse effects No data available.

13. Disposal considerations

Disposal instructions	This material, as supplied, when discarded or disposed of, is not a hazardous waste according to Federal Regulations (40 CFR 261). Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN2211
UN proper shipping name	Polymeric beads, expandable
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	III
Environmental hazards	
Marine pollutant	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	32, IB8, IP3, IP7, T1, TP33
Packaging exceptions	155
Packaging non bulk	221
Packaging bulk	221

IATA

UN number	UN2211
UN proper shipping name	Polymeric beads, expandable
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	9L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN2211
UN proper shipping name	POLYMERIC BEADS, EXPANDABLE
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-I
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Pentanes (all Isomers) (CAS Mixture) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)

All components are either listed on the TSCA 8(b) inventory and designated "active" or exempt from listing.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical Yes**Classified hazard categories** Combustible dust**SARA 313 (TRI reporting)**

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Pentanes (all Isomers) (CAS Mixture)

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.**US state regulations****US. Massachusetts RTK - Substance List**

Graphite Powder (CAS 7782-42-5)

Pentanes (all Isomers) (CAS Mixture)

US. New Jersey Worker and Community Right-to-Know Act

Graphite Powder (CAS 7782-42-5)

Pentanes (all Isomers) (CAS Mixture)

US. Pennsylvania Worker and Community Right-to-Know Law

Graphite Powder (CAS 7782-42-5)

Pentanes (all Isomers) (CAS Mixture)

US. Rhode Island RTK

Graphite Powder (CAS 7782-42-5)

Pentanes (all Isomers) (CAS Mixture)

California Proposition 65**WARNING:** This product can expose you to chemicals including Styrene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.**California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Ethylbenzene (CAS 100-41-4)

Listed: June 11, 2004

Styrene (CAS 100-42-5)

Listed: April 22, 2016

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Pentanes (all Isomers) (CAS Mixture)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	31-July-2023
Revision date	-
Version #	01
Further information	Refer to: OSHA 3371-08 2009, Hazard Communication Guidance for Combustible Dusts NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids
HMIS® ratings	Health: 1 Flammability: 2 Physical hazard: 0 Personal protection: E

NFPA ratings



Disclaimer

Epsilyte, LLC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.