

MATERIAL SAFETY DATA SHEET

Section I. Product and Manufacturer Identification

Product Name: DeepRoot UB 36-2 & UB 48-2

Product Description: Extruded, molded, natural pelleted thermoplastic polyethylene compounds

Base Resin: 1-Butene, polymer with Ethene

Color: Black

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Contact for Information / Manufacturer Identification:

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Section II. Composition Information

Component	CAS #	Amount (% W/W)
1-Butene, Polymer with Ethene	25087-34-7	>= 99%

Section III. Hazards Identification

3.1 Emergency Overview

Appearance: 12" x 36 or 48" extruded interlocking panels; black color

Odor: Negligible odor

3.2 Potential Health Effects

General Health Hazards

Treat fines and dust as nuisance particulates. Avoid breathing dust and processing fumes. Dust causes eye irritation, experienced as stinging and discomfort or pain.

Effects of Single Acute Overexposure

Inhalation	See General Health Hazards
Eye Contact	See General Health Hazards
Skin Contact	See General Health Hazards
Skin Absorption	No evidence of harmful effects from available information
Swallowing	No evidence of harmful effects from available information

Chronic, Prolonged or Repeated Overexposure

Effects of Repeated Overexposure	No adverse effects anticipated from available information
Other Effects of Overexposure	None currently known

Medical Conditions Aggravated by Exposure

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

3.3 Potential Environmental Effects

See section XII for Ecological information

Section IV. First Aid Measures

4.1 Inhalation

If inhaled, remove to fresh air

4.2 Eye Contact

In case of dust contact with eye(s), flush eyes thoroughly with water for several minutes. Remove contact lenses, if worn. See medical advice if irritation persists. For thermal eye burns, immediately flush eyes with water and continue washing for several minutes. DO NOT remove contact lenses, if worn. Obtain medical attention without delay, preferably from an ophthalmologist

4.3 Skin Contact

For Thermal skin burns, remove clothing, any jewelry, and gross debris from the burned area. Leave blisters intact. Wash the area thoroughly with room temperature tap water. Do not use ice. Cover the wounded area with gauze dressing moistened with cool water; keep the dressing moist. Seek medical attention.

4.4 Swallowing

No emergency care anticipated

4.5 Note to Physician

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

Section V. Fire Fighting Measures

5.1 Flammable Properties

Flash Point – Closed Cup: *Not determined*

Flash Point – Open Cup: *Not determined*

Autoignition Temperature: generally 260 – 410°C (500 - 770°F) depending on individual product composition.

Flammable Limits in Air:

Lower *Not determined*

Upper *Not determined*

5.2 Extinguishing Media

Extinguish fires with water spray or apply alcohol-type or all-purpose-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

5.3 Extinguishing Media to Avoid

No information currently available

5.4 Special Fire Fighting Procedures

Do not direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.

5.5 Special Protective Equipment for Firefighters

Use self-contained breathing apparatus and protective clothing

5.6 Unusual Fire and Explosion Hazards

Avoid dispersion of dust in air to reduce potential for dust ignition/explosions. Refer to National Fire Protection Association Document NFPA 69 for descriptions of explosion prevention systems.

5.7 Hazardous Combustion Products

See Section 10.1 Thermal Decomposition

Section VI. Accidental Release Measures

The product is shipped in cardboard containers and poses no release problems

Section VII. Handling and Storage

7.1 Handling

This product is normally shipped in cardboard cartons. The boxes and plastic will burn in the presence of open flame. Do not weld or use open flame where product is stored without proper fire fighting prevention measures.

7.2 Storage

Store in accordance with good industrial practices

Section VIII. Exposure Controls and Personal Protection

Reference Sections III, IV, and V.

Section IX. Physical and Chemical Properties

Physical State and Appearance: Solid Panel, black color

pH: Not currently available

Solubility in Water (by weight): *Not determined*

Odor: Negligible odor

Solid Density 0.870 – 0.965 g/cm³ 54.321 – 60.243 lb/ft³

Boiling Point: *Not determined*

Freezing Point: *Not determined*

Specific Gravity: *Not determined*

Vapor Pressure at 20° C: *Not determined*

Vapor Density (air =1): *Not determined*

Melting Point: *Not determined*

Melt Index: 0.01 - 100

Section X. Stability and Reactivity

10.1 Stability/Instability Stable

Conditions to avoid: Prolonged exposure to temperatures over 250°C (482°F) may cause resin decomposition.

Thermal Decomposition: Carbon Monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Aldehydes are known irritants. In addition some aldehydes are skin sensitizers and/or probable carcinogens. Acute overexposure to the decomposition products may result in headache, nausea, and irritation of the eyes, skin and respiratory tract.

Thermal Decomposition Products

Carbon Monoxide

Carbon Dioxide

Aldehydes

Other Organic Vapor

10.2 Hazardous Polymerization Will not occur

10.3 Inhibitors/Stabilizers Not applicable

Section XI. Toxicology Information

The following information is based on published toxicity data for associated base polymers (ethane homopolymer, 1-butene polymer with ethane, and 1-hexene polymer with ethane). These data were not produced by Deep Root Partners, L.P.

Acute Toxicity

Peroral

Rat: Lethal Dose = > 7.95 g/kg; no effects

Peroral

Mouse; Lethal Dose = > 7.0 g/kg

Inhalation

Variable Dust Concentrations Studies, 0.5 h Mouse; LC 50= 12000 mg/m³

Irritation

Skin: May cause abrasion or other mechanical irritation

Eye:

Results: May cause irritation

Repeated Exposure

Inclusion of 1-butene polymer with ethane in the diet of rats for 90 days at 5% or less caused no adverse effects

Sensitization (Animal and Human Studies)

Polyethylene is not considered to be a skin sensitizer

Chronic Toxicity and Carcinogenicity

According to published data, inclusion of polyethylene in the diet of rats at 8 g/kg/day did not result in treatment related effects. Polyethylene implanted into rats and mice has reportedly cause tumorigenic activity at doses of 33 to 2120 mg/kg, but the relevance to human exposure is not certain. There has been extensive use of polyethylene in industry and medicine.

Section XII. Ecological Information

Environmental Fate

Degradation of this polyethylene product is not anticipated under environmental exposure conditions.

Section XIII. Disposal Measures

13.1 Waste Disposal Method

This product is non hazardous as it arrives. If grinding occurs some of the encapsulated components may present an environmental disposal problem. Refer to applicable federal, state, and local regulations.

13.2 Disposal Considerations

When disposed of, this product is not considered a RCRA hazardous waste.

Disposal methods identified are for the product as sold. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permissible under applicable rules, regulations and/or laws governing your location.

Section XIV. Transportation Information

This product is not a regulated substance under Department of Transportation regulations. All hazardous components, if any, are encapsulated.

Section XV. Regulatory Information

15.1 Federal/National

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Section 103 (CERCLA)

The following components of this product are specifically listed as hazardous substances in 40 CFR 302.4 (unlisted hazardous substances are not identified) and are present at levels which could require reporting:

Because no constituents of the polyethylene resin are released to the environment under normal conditions of use and processing, the resin and its constituents are not subject to the emergency release reporting provisions of Section 103 of CERCLA or Section 304 of SARA Title III (EPCRA).

Superfund Amendments and Reauthorization Act of 1986 Title III (EPCRA) Sections 302 and 304

The following components of this product are listed as extremely hazardous substances in 40 CFR part 355 and are present at levels which could require reporting and emergency planning:

None

Superfund Amendments and Reauthorization Act of 1986 Title III (EPCRA) Section 313

The following components of this product are listed as toxic chemicals in 40 CFR 372.65 and are present at levels which could require reporting and customer notification under Section 313 and 40 CFR Part 372:

This product does not contain toxic chemicals at levels which require reporting under the statute

Superfund Amendments and Reauthorization Act of 1986 Title III (EPCRA) Sections 311 and 312

Delayed Hazard: No
Fire Hazard: No
Immediate Health Hazard: No
Reactive Hazard: No
Sudden Release of Pressure Hazard: No

Toxic Substances Control Act (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

European Inventory of Existing Commercial Chemical Substances (EINECS)

All components in this product are in compliance with EINECS

CEPA – Domestic Substances List (DSL)

The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.

15.2 State/Local

Pennsylvania (Worker and Community Right-To-Know Act)

This product is subject to the Worker and Community Right-To-Know Act. The following components of this product are at levels which could require identification in the MSDS:

None

Massachusetts (Hazardous Substances Disclosure by Employers)

The following components of this product appear on the Massachusetts Substance List and are present at levels which could require identification in the MSDS:

None

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.