

**MATERIAL SAFETY DATA SHEET**

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**1. IDENTIFICATION OF PRODUCT AND COMPANY**

Product: Ronabond HDPE Geo Sheet  
High Density Polyethylene (HDPE) – carbon black filled

Use of the Substance /  
Preparation : A polyethylene plastic - for industrial conversion as a raw  
material for the manufacture of articles or goods.

Company: Ronacrete (Far East) Ltd., 16/F, No. 3 Lockhart Rd,  
Wanchai, Hong Kong SAR

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**2. COMPOSITION / INFORMATION ON INGREDIENTS**

Component	Amount	Classification	CAS #	EC #
Ethylene, polymer with 1-butene	≥ 96.0 %	Not classified	25087-34-7	Polymer
Carbon black	2.25%	Not classified	1333-86-4	215-609-9
Additives	≤ 1.0%	Not classified	N/A	N/A

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**3. HAZARDS IDENTIFICATION**

This product is not classified as dangerous according to EC criteria.

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**4. FIRST AID MEASURES**

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact: If molten material comes in contact with the skin, do not apply ice but cool under ice water or running stream of water. DO NOT attempt to remove the material from skin. Removal could result in severe tissue damage. Seek medical attention immediately.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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**MATERIAL SAFETY DATA SHEET****5. FIRE FIGHTING MEASURES**

## Extinguishing Media:

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

## Fire Fighting Procedures:

Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires.

Special Protective Equipment for Fire-fighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, do not permit dust to accumulate. Dense smoke is emitted when burned without sufficient oxygen.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

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**6. ACCIDENTAL RELEASE MEASURES**

## Steps to be Taken if Material is Released or Spilled:

Contain spilled material if possible. Sweep up. Collect in suitable and properly labelled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

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**7. HANDLING AND STORAGE**

## Handling

General Handling: No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. Avoid breathing process fumes. Use with adequate ventilation. When appropriate, unique handling information for containers can be found on the product label. Workers should be protected from the possibility of contact with molten resin. Do not get molten material in eyes, on skin or clothing. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge.

## Storage

Store in accordance with good manufacturing practices.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits: None established

**Personal Protection**

**Eye/Face Protection:** Use safety glasses. Safety glasses should be consistent with Directive 89/686/EEC Category 2. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator.

**Skin Protection:** No precautions other than clean body-covering clothing should be needed.

**Hand Protection:** Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized. Use gloves with insulation for thermal protection, when needed.

**Respiratory Protection:** Use an approved air-purifying respirator when vapours are generated at increased temperatures or when dust or mist is present. Use the following CE approved air-purifying respirator: When dust/mist are present use a/an Particulate filter, type P2. When combinations of vapours, acids, or dusts/mists are present use a/an Organic vapour cartridge with a particulate pre- filter, type AP2.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**Engineering Controls Ventilation:** Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical	State sheet
Colour	Black
Odour	Odourless
Flash Point - Closed Cup	Not applicable
Flammable Limits In Air	Lower: Not applicable Upper: Not applicable
Autoignition Temperature	No test data available
Vapour Pressure	Not applicable
Boiling Point (760 mmHg)	Not applicable
Vapour Density (air = 1)	Not applicable
Specific Gravity (H <sub>2</sub> O = 1)	0.83 - 0.97 Literature
Freezing Point	Not applicable
Melting Point	130 – 135°C Literature
Solubility in Water (by weight)	Negligible
pH	Not applicable
Kinematic Viscosity	Not applicable

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**10. STABILITY AND REACTIVITY**

Stability/Instability : Stable.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible Materials: None known.

Hazardous Polymerization : Will not occur.

Thermal Decomposition : Decomposition products depend upon temperature, air supply and the presence of other materials. Processing may release fumes and other decomposition products. At temperatures exceeding melt temperatures, polymer fragments can be released. Fumes can be irritating. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Organic acids.

Decomposition products can include trace amounts of: Hydrocarbons.

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**11. TOXICOLOGICAL INFORMATION**

Acute Toxicity Ingestion : Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. May cause choking if swallowed. Estimated LD50, Rat > 5,000 mg/kg

Eye Contact : Solid or dust may cause irritation or corneal injury due to mechanical action. Vapour may cause eye irritation experienced as mild discomfort and redness.

Skin Contact : Prolonged contact is essentially non-irritating to skin. Mechanical injury only. Under normal processing conditions, material is heated to elevated temperatures; contact with the material may cause thermal burns.

Skin Absorption : No adverse effects anticipated by skin absorption. Estimated LD50, Rabbit > 2,000 mg/kg Inhalation No adverse effects are anticipated from single exposure to dust.

Vapours/fumes released during thermal processing may cause respiratory irritation. Repeated Dose Toxicity : Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

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**12. ECOLOGICAL INFORMATION****Chemical fate Movement & Partitioning**

No bio concentration is expected because of the relatively high molecular weight (MW greater than 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

**Persistence and Degradability**

This water-insoluble polymeric solid is expected to be inert in the environment. Surface photo degradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

**Ecotoxicity**

Not expected to be acutely toxic, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

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### 13. DISPOSAL CONSIDERATIONS

For uncontaminated material the disposal options include mechanical and chemical recycling or energy recovery. In some countries landfill is also allowed. For contaminated material the options remain the same, although additional evaluation is required. For all countries the disposal methods must be in compliance with national and provincial laws and any municipal or local by-laws. All disposal methods must be in compliance with the EU framework Directives 91/156/EEC, 91/689/EEC and their subsequent adaptations, as implemented in National Laws and Regulations, as well as EU Directives dealing with priority waste streams. Transboundary shipment of wastes must be in compliance with EU Regulation 259/93 and subsequent modifications.

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### 14. TRANSPORT INFORMATION

Road & Rail : NOT REGULATED

Ocean NOT : REGULATED

Air : NOT REGULATED

Inland Waterways : NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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### 15. REGULATORY INFORMATION

European Inventory of Existing Commercial Chemical Substances (EINECS)

This product is a polymer according to the definition in Directive 92/32/EEC (7th Amendment to Directive 67/548/EEC) and all of its starting materials and intentional additives are listed in the European Inventory of Existing Commercial Chemical Substances (EINECS) or in compliance with European (EU) chemical inventory requirements.

Classification and User Label Information

This product is not classified as dangerous according to EC criteria.

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### 16. OTHER INFORMATION

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