Safety Data Sheet:

R-E-D Dynapoz Metakaolin – 110 CR

Section 1 – Identification of Product and Company

Tradenames	R-E-D Dynapoz Metakaolin – 110 CR
Other Means of Identification	Low Burn Fireclay, Ball Park Red, Low Burn #2, Rotary Kiln Fines (RKF), #2 Calcine Flint, Calcinated Ballfield Red
Product Form	Mixture
Product Uses	Pozzolan, Soil Conditioner, High Temperature Aggregate

Contact Information

R-E-D Industrial Products
4 Village Park Dr.
Grove City, PA 16127
United States

Emergency Phone Number

Technical Information	(877) 733-2281
Fax Number	(877) 733-2281
Website	www.redindustrialproucts.com

Section 2 – Hazards Identification

Classification of the Substance or Mixture
GHS-US Classification:
Carc. 1A H350
STOT-RE 1 H372

Label Elements
GHS-US Labeling

Hazard Pictograms

Signal Word (GHS-US)
Danger

Hazard Statements (GHS-US)
H350 - May cause cancer.
H372 - Causes damage to organs through prolonged or repeated exposure via inhalation.

Precautionary Statements (GHS-US)
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breath dust.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear gloves, protective clothing, eye protection, respiratory protection.
P308 & P313 - If exposed or concerned, get medical advice/attention.
P314 - Get medical advice/attention if you feel unwell.
P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.

Other Hazards
Not available.

Unknown Acute Toxicity (GHS-US)
0-3% of the mixture consists of ingredient(s) of unknown acute toxicity.

Section 3 – Composition / Information on Ingredients

Substance	CAS No.	Percentage W/W (%)	GHS Classification
Silica, Amorphous	7631-86-9	60% - 90%	Not Classified
Quartz	14808-60-7	0% - 25%	Carc. 1A, H350 STOT-RE 1, H372
Mullite	1302-93-8	0% - 3%	Not Classified
Kaolin	1332-58-7	0% - 10%	Not Classified
Titanium Dioxide	13463-67-7	0% - 2.75%	Not Classified
Silica, Cristobalite	14464-46-1	0% - 2.0%	Carc. 1A, H350 STOT-RE 1, H372

Section 4 – First Aid Measures

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation If product is inhaled and irritation of the nose or coughing occurs, remove person to fresh air. Get medical advice/attention if respiratory symptoms persist.

Skin Contact Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Seek medical attention if irritation persists.

Eye Contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice/attention if irritation occurs or persists.

Ingestion Rinse mouth with water. Do NOT induce vomiting. Seek medical attention.

Most Important Symptoms and Effects, Both Acute and Delayed:

General Causes damage to organs through prolonged or repeated exposure (inhalation).

Inhalation May cause cancer by inhalation. Dust from this product may cause irritation to the respiratory system.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Ingestion If a large quantity has been ingested: Intestinal blockage. Gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever and weight loss. Acute silicosis can be fatal.

Indication of Any Immediate Medical Attention and Special Treatment Needed
If exposed or concerned, seek medical advice/attention.

Section 5 – Firefighting Measures

Extinguishing Media:

Suitable Extinguishing Media Product is not flammable. Use extinguishing media appropriate for surrounding fire.
Unsuitable Extinguishing Media Not applicable, the product is not flammable.

Special Hazards Arising from the Substance or Mixture:

Fire Hazard Not flammable.
Explosion Hazard Product is not explosive.
Reactivity Hazardous reactions will not occur under normal conditions.

Advice for Firefighters:

Precautionary Measures Fire	Exercise caution when fighting any chemical fire.
Firefighting Instructions	Use water spray or fog for cooling exposed containers.
Protection During Firefighting	Do not enter fire area without proper protective equipment, including respiratory protection.
Hazardous Combustion Products	Not available.
Other Information	Do not allow run-off from firefighting to enter drains or water courses.
Reference to Other Sections	Refer to section 9 for flammability properties.

Section 6 – Accidental Release Measures

General Measures	Do not breathe dust. Avoid generating dust.

For Non-Emergency Personnel:

Protective Equipment	Use appropriate personal protection equipment (PPE).
Emergency Procedures	Evacuate unnecessary personnel.

For Emergency Personnel:

Protective Equipment	Equip cleanup crew with proper protection.
Emergency Procedures	Ventilate area.
Environmental Precautions:	Prevent entry to sewers and public waters.

Methods and Materials for Containment and Cleaning-up:

For Containment	Avoid generation of dust during clean-up of spills.
Methods for Cleaning-Up	Clean up spills immediately and dispose of waste safely. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up. Avoid generation of dust during clean-up of spills.
Reference to Other Sections	See section 8, Exposure Controls / Personal Protection.

Section 7 – Handling and Storage

Precautions for Safe Handling:

Additional Hazards When Processed
Do not breathe dust. Avoid dust production. Repeated or prolonged exposure to respirable crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss. Acute silicosis can be fatal.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety procedure. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product. Wash hands, forearms, and other exposed areas thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities:

Storage Conditions	Store in a dry, cool and well-ventilated place. Keep container closed when not in use.
Incompatible Materials	Strong acids, strong bases, strong oxidizers.
Specific End Use(s)	Pozzolan, soil conditioner, high temperature aggregate.

Section 8 – Exposure Controls / Personal Protection

Control Parameters

Silica, cristobalite (14464-46-1)		
Mexico	OEL TWA (mg/m³)	0.05 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.05 mg/m³
USA IDLH	US IDLH (mg/m³)	25 mg/m³
Alberta	OEL TWA (mg/m³)	0.025 mg/m³
British Columbia	OEL TWA (mg/m³)	0.025 mg/m³
Manitoba	OEL TWA (mg/m³)	0.025 mg/m³
New Brunswick	OEL TWA (mg/m³)	0.05 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.025 mg/m³
Nova Scotia	OEL TWA (mg/m³)	0.025 mg/m³
Nunavut	OEL TWA (mg/m³)	0.15 mg/m³ (total mass)
Northwest Territories	OEL TWA (mg/m³)	0.15 mg/m³ (total mass)
Ontario	OEL TWA (mg/m³)	0.05 mg/m³ (designated substance regulation)
Prince Edward Island	OEL TWA (mg/m³)	0.025 mg/m³
Québec	VEMP (mg/m³)	0.05 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.05 mg/m³
Yukon	OEL TWA (mg/m³)	150 particle/mL

Quartz (14808-60-7)		
Mexico	OEL TWA (mg/m³)	0.1 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.05 mg/m³
USA IDLH	US IDLH (mg/m³)	50 mg/m³
Alberta	OEL TWA (mg/m³)	0.025 mg/m³
British Columbia	OEL TWA (mg/m³)	0.025 mg/m³
Manitoba	OEL TWA (mg/m³)	0.025 mg/m³
New Brunswick	OEL TWA (mg/m³)	0.1 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.025 mg/m³
Nova Scotia	OEL TWA (mg/m³)	0.025 mg/m³
Nunavut	OEL TWA (mg/m³)	0.3 mg/m³ (total mass)
Northwest Territories	OEL TWA (mg/m³)	0.3 mg/m³ (total mass)
Ontario	OEL TWA (mg/m³)	0.10 mg/m³ (designated substance regulation)
Prince Edward Island	OEL TWA (mg/m³)	0.025 mg/m³
Québec	VEMP (mg/m³)	0.1 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.05 mg/m³
Yukon	OEL TWA (mg/m³)	300 particle/mL

Titanium dioxide (13463-67-7)		
Mexico	OEL TWA (mg/m³)	10 mg/m³
Mexico	OEL STEL (mg/m³)	20 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³
USA IDLH	US IDLH (mg/m³)	5000 mg/m³
Alberta	OEL TWA (mg/m³)	10 mg/m³
British Columbia	OEL TWA (mg/m³)	3 mg/m³
Manitoba	OEL TWA (mg/m³)	10 mg/m³
New Brunswick	OEL TWA (mg/m³)	10 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	10 mg/m³
Nova Scotia	OEL TWA (mg/m³)	10 mg/m³
Nunavut	OEL TWA (mg/m³)	10 mg/m³ (total mass)
Northwest Territories	OEL TWA (mg/m³)	10 mg/m³ (total mass)

Ontario	OEL TWA (mg/m³)	10 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	10 mg/m³
Québec	VEMP (mg/m³)	10 mg/m³ (containing no Asbestos and <1% Crystalline silica)
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³
Yukon	OEL STEL (mg/m³)	20 mg/m³
Yukon	OEL TWA (mg/m³)	10 mg/m³

Kaolin (1332-58-7)		
Mexico	OEL TWA (mg/m³)	10 mg/m³
Mexico	OEL STEL (mg/m³)	20 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³
Alberta	OEL TWA (mg/m³)	2 mg/m³
British Columbia	OEL TWA (mg/m³)	2 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Manitoba	OEL TWA (mg/m³)	2 mg/m³
New Brunswick	OEL TWA (mg/m³)	2 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	2 mg/m³
Nova Scotia	OEL TWA (mg/m³)	2 mg/m³
Nunavut	OEL TWA (mg/m³)	10 mg/m³ (total mass)
Northwest Territories	OEL TWA (mg/m³)	10 mg/m³ (total mass)
Ontario	OEL TWA (mg/m³)	2 mg/m³ (containing no Asbestos and <1% Crystalline silica)
Prince Edward Island	OEL TWA (mg/m³)	2 mg/m³
Québec	VEMP (mg/m³)	5 mg/m³ (containing no Asbestos and <1% Crystalline silica)
Saskatchewan	OEL STEL (mg/m³)	4 mg/m³
Saskatchewan	OEL TWA (mg/m³)	2 mg/m³
Yukon	OEL STEL (mg/m³)	20 mg/m³
Yukon	OEL TWA (mg/m³)	10 mg/m³

Silica, amorphous (7631-86-9)		
USA NIOSH	NIOSH REL (TWA) (mg/m³)	6 mg/m³
USA IDLH	US IDLH (mg/m³)	3000 mg/m³
Nunavut	OEL TWA (mg/m³)	0.15 mg/m³ (regulated under Silica flour, total mass)
Northwest Territories	OEL TWA (mg/m³)	0.15 mg/m³ (total mass, regulated under Silica flour)
Yukon	OEL TWA (mg/m³)	2 mg/m³

Exposure Controls

Appropriate Engineering Controls — Provide adequate ventilation to minimize dust concentrations. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal Protective Equipment — Respiratory protection of the dependent type. Protective clothing, goggle and gloves.

Materials for Protective Clothing — Chemically resistant materials and fabrics.

Hand Protection — Protective gloves.

Eye Protection — Chemical goggles or safety glasses.

Skin and Body Protection — Wear appropriate protective clothing.

Respiratory Protection — Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of dust are expected to exceed exposure limits.

Other Information — When using, do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

Physical State	Solid
Appearance	White-red, granular to powder, aggregate to dust
Odor	Odorless
Odor Threshold	Not available
pH	Not available
Relative Evaporation Rate (butylacetate=1)	Not available
Melting Point	> 1300° C (2372° F)
Freezing Point	Not available
Boiling Point	Not available
Flash Point	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Flammability (solid, gas)	Not available
Lower Flammable Limit	Not available
Upper Flammable Limit	Not available
Vapor Pressure	Not available
Relative Vapor Density at 20° C	Not available
Relative Density	Not available
Specific Gravity	1.7 - 2.4 g/cc
Solubility	Not available
Log Pow	Not available
Log Kow	Not available
Viscosity, Kinematic	Not available
Viscosity, Dynamic	Not available
Explosion Data – Sensitivity to Mechanical Impact	Not available
Explosion Data – Sensitivity to Static Discharge	Not available

Section 10 – Stability and Reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
Chemical Stability	Stable at standard temperature and pressure.
Possibility of Hazardous Reactions	Hazardous polymerization will not occur.
Conditions to Avoid	Incompatible materials.
Hazardous Decomposition Products	Not available.

Section 11 – Toxicological Information

Information on Toxicological Effects - Product

Acute Toxicity	Not classified.
LD50 and LC50 Data	Not available.
Skin Corrosion/Irritation	Not classified.
Serious Eye Damage/Irritation	Not classified.
Respiratory or Skin Sensitization	Not classified.

Germ Cell Mutagenicity	Not classified.
Teratogenicity	Not available.
Carcinogenicity	May cause cancer (inhalation).
Specific Target Organ Toxicity (Repeated Exposure)	Causes damage to organs through prolonged or repeated exposure (inhalation).
Specific Target Organ Toxicity (Single Exposure)	Not classified.
Reproductive Toxicity	Not classified.
Aspiration Hazard	Not classified.
Symptoms/Injuries After Inhalation	May cause cancer by inhalation. Dust from this product may cause irritation to the respiratory tract.
Symptoms/Injuries After Skin Contact	Prolonged contact with large amounts of dust may cause mechanical irritation.
Symptoms/Injuries After Eye Contact	Prolonged contact with large amounts of dust may cause mechanical irritation.
Symptoms/Injuries After Ingestion	If a large quantity has been ingested: intestinal blockage. Gastrointestinal irritation.
Chronic Symptoms	Repeated or prolonged exposure to respirable crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss. Acute silicosis can be fatal.

Information on Toxicological Effect – Ingredients
LD50 and LC50

Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg

Titanium dioxide (13463-67-7)	
LD50 Oral Rat	> 10000 mg/kg

Silica, amorphous (7631-86-9)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat (mg/l)	> 2.2 mg/l (Exposure time: 1 h)

Silica, cristobalite (14464-46-1)	
IARC Group	1

Quartz (14808-60-7)	
IARC Group	1
National Toxicity Program (NTP) Status	2

Titanium dioxide (13463-67-7)	
IARC Group	2B
National Toxicity Program (NTP) Status	1

Silica, amorphous (7631-86-9)	
IARC Group	3

Section 12 – Ecological Information

Toxicity

Silica, amorphous (7631-86-9)	
LC50 Fish 1	5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 Daphnia 1	7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)
EC50 Other Aquatic Organisms 1	440 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata)

Persistence and Degradability

Dynapoz, Low Burn Fireclay, Ball Park Red, Low Burn #2, RKF, Rotary Kiln Fines, #2 Calcine Flint, Calcined Ballfield Red	
Persistence and Degradability	Not established.

Bioaccumulative Potential

Dynapoz, Low Burn Fireclay, Ball Park Red, Low Burn #2, RKF, Rotary Kiln Fines, #2 Calcine Flint, Calcined Ballfield Red	
Bioaccumulative Potential	Not established.

Silica, amorphous (7631-86-9)	
BCF Fish 1	(no bioaccumulation expected)

Mobility in Soil Not available.

Other Information Avoid release to the environment.

Section 13 – Disposal Considerations

Waste Disposal Recommendations Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Section 14 – Transport Information

In accordance with ICAO/IATA/DOT/TDG

UN Number Not regulated for transport.

UN Proper Shipping Name Not regulated for transport.

Additional Information Not regulated for transport.

Transport by Sea Not regulated for transport.

Air Transport Not regulated for transport.

Section 15 – Regulatory Information

US Federal Regulations

Dynapoz, Low Burn Fire Clay, Ball Park Red	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard. Immediate (acute) health hazard.
Mullite (1302-93-8)	Listed on the US TSCA (Toxic Substances Control Act) inventory.
Silica, Cristobalite (14464-46-1)	Listed on the US TSCA (Toxic Substances Control Act) inventory.
Quartz (14808-60-7	Listed on the US TSCA (Toxic Substances Control Act) inventory.
Titanium Dioxide (13463-67-7)	Listed on the US TSCA (Toxic Substances Control Act) inventory.
Kaolin (1332-58-7)	Listed on the US TSCA (Toxic Substances Control Act) inventory.
Silica, amorphous (7631-86-9)	Listed on the US TSCA (Toxic Substances Control Act) inventory.

US State Regulations

Quartz (14808-60-7) U.S. – California Proposition 65 – Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer. U.S. – Massachusetts – Right to Know list. U.S. – New Jersey – Right to Know hazardous substance list. U.S. – Pennsylvania – Right to Know List.
Titanium Dioxide (13463-67-7) U.S. – California Proposition 65 – Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer. U.S. – New Jersey – Right to Know hazardous substance list. U.S. – Pennsylvania – Right to Know List.
Silica, Cristobalite (14464-46-1)	U.S. – New Jersey – Right to Know hazardous substance list. U.S. – Pennsylvania – Right to Know List.
Kaolin (1332-58-7)	U.S. – Massachusetts – Right to Know list. U.S. – New Jersey – Right to Know hazardous substance list. U.S. – Pennsylvania – Right to Know List.
Silica, amorphous (7631-86-9)	U.S. – Massachusetts – Right to Know list. U.S. – New Jersey – Right to Know hazardous substance list. U.S. – Pennsylvania – Right to Know List.

Canadian Regulations

Dynapoz, Low Burn Fireclay, Ball Park Red, Low Burn #2, RKF, Rotary Kiln Fines, #2 Calcine Flint, Calcined Ballfield Red	
WHMIS Classification	Class D Division 2 Subdivision A – very toxic material causing other toxic effects. Class D Division 2 Subdivision B – Toxic material causing other toxic effects.
	
Mullite (1302-93-8)	Listed on the Canadian DSL (Domestic Substances List) inventory.
Silica, Cristobalite (14464-46-1)	Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List. WHMIS Classification - Class D Division 2 Subdivision A – very toxic material causing other toxic effects.
Quartz (14808-60-7)	Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List. WHMIS Classification - Class D Division 2 Subdivision A – very toxic material causing other toxic effects.
Titanium Dioxide (13463-67-7)	Listed on the Canadian DSL (Domestic Substances List) inventory. WHMIS Classification - Class D Division 2 Subdivision A – very toxic material causing other toxic effects.
Kaolin (1332-587)	Listed on the Canadian DSL (Domestic Substances List) inventory. WHMIS Classification - Class D Division 2 Subdivision A – very toxic material causing other toxic effects.
Silica, amorphous (7631-86-9)	Listed on the Canadian DSL (Domestic Substances List) inventory. WHMIS Classification - Class D Division 2 Subdivision A – very toxic material causing other toxic effects.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by CPR.

Section 16 – Other Information

Indications of Changes 06/06/2013

Other Information This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases

GHS Full Text Phrases

Carc. 1A	Carcinogenicity Category 1A.
STOT-RE 1	Specific target organ toxicity (repeated exposure) Category 1.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

Party Responsible for the Preparation of This Document
R-E-D Industrial Products
4 Village Park Dr. Suite 110
Grove City, PA 16127
(877) 733-2281

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