

Material Safety Data Sheet

TRI-C ENTERPRISES, LLC
4011 SCHAEFER AVENUE
Chino, CA 91710
(800) 927-3311

MSDS#: 3030 series
Date: August 1, 1997

Section 1	Identification
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Trade Name: Tri-C Humate Plus Soil Conditioner

Ingredient Name:	CAS Number	OSHA PEL	ACGIH TLV
Gypsum	#10101-41-4	15 Mg/M3	N/A
Sulfur	7704-34-9	N/A	2Mg/M

Oxidized Lignite Carbonaceous Shale

*Chemical Family: Lignite

*Common Names: Humate, Leonardite, Humus

Section 2	Shipping Data
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Shipping Name: Not regulated by D.O.T.

Hazard Class: None

Reportable Quantity (RQ): None

Labels Required: None

Placard: None

C.A.S. Numbers: As Noted Above

D.O.T. Number: None

Hazardous Waste No.: None

EPA Registration No.: None

Section 3	Physical Data
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Appearance & Odor: Dark Brown to Black Granules. No appreciable odor level

Boiling Point: Not Applicable

Vapor Pressure: Not Applicable

Water Solubility: Slight

Evaporation Rate: Not Applicable

Specific Gravity: .8 - .9

% Volatile by Volume: Not Applicable

Section 4	Fire & Explosion
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Flash Point: Not Applicable

Auto Ignition Temperatures: Not Applicable

Extinguishing Media: Material is essentially non-flammable.

Fire Fighting Procedures: Wear full protective clothing and self-contained breathing apparatus. Use agents appropriate to surrounding materials to extinguish fire. Evacuate downwind if large quantities are involved in fire.

Unusual Fire or Explosion Hazards: Not applicable

Flammable Limits: Not Applicable

Section 5	Health Data
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Effects of Over Exposure: Minimal-Dust may cause mild irritate eyes or nose.

Eyes: Flush thoroughly with water. Seek medical attention if irritation persists.

Skin: Wash thoroughly with soap and water.

Inhalation: Do not inhale.

Ingestion: If large quantities swallowed may cause gastrointestinal irritation. Seek medical attention.

Health Effects:

Eyes: Mild irritation to mucous membranes, respiratory passages and irritate eyes. Non-systemic.

Skin: No incidents of irritation to the skin reported.
Inhalation: Not applicable.
Ingestion: Low toxicity... LD₅₀ unknown.
Exposure Standard: None established.

For Health Emergencies Call Your Local Poison Control Center

Section 6	Precautions for Safe Handling & Use
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If Material is Released or Spilled: Sweep up and scoop into container for reuse; recycle or disposal. Keep out of all waterways.

Disposal: Use or recycle. If product is contaminated, dispose of in an approved landfill disposal facility in accordance with applicable federal, state provincial or local regulations.

Precautions to be Taken in Handling and Storing: Store in dry area. Keep out of reach of children.

Section 7	Control Measures
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Respiratory Protection: NIOSH/MSHA approved respirator.

Ventilation: Local exhaust: Local exhaust or general ventilation.

Mechanical (general): To keep dust below OSHA nuisance—15 Mg/M3

Protective Gloves: None Required

Eye Protection: Protective Goggles

Other Protective Clothing or Equipment: None Required

Work/hygienic Practices: Normal hygienic practices.

Section 8	Additional Information
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**Notice from Tri-C Enterprises, LLC
Concerning This Material Safety Data Sheet**

The information contained herein is offered only as a guide to the handling of these specific materials. Since such information does not relate to use of the material with any other material or in any process, any person using this information must determine for himself its suitability for any particular application. The buyer and user assume all risk and liability of use, storage and/or handling of this product not in accordance with the terms of the product label.

**Contact:
General Manager
Telephone: 1-800-927-3311**

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ZeoPro™, ZeoPro Plus™, ZeoPro GB™ ZeoPro-80™, ZeoPro-100™**CONTACT:**

ZeoponiX, Inc.
 686 S. Taylor Avenue, Suite 102
 Louisville, CO 80027
 phone 303-673-0098
 FAX 303-673-9583

PRODUCT IDENTIFICATION:

Trade Name(s): ZeoPro, ZeoPro Plus, ZeoPro GB, ZeoPro-80, ZeoPro-100

Generic Name: none applicable for this blend of ingredients

Common and chemical names of the materials contained in product are:

Clinoptilolite (a natural zeolite mineral), hydrated potassium-calcium-alumino silicate (modified with substituted ammonium-N and potassium ions); and calcium apatite, calcium hydroxy phosphate, calcium phosphate; and may also contain some trace substituted elements of boron, molybdenum, iron, manganese, copper, zinc, or magnesium in the calcium apatite crystal structure; and may also contain some fluorapatite, or calcium carbonate or magnesium-calcium carbonate.

PRODUCT DESCRIPTION:

The ZeoPro products are soil amendments and fertilizers and are used for direct application to soils and other growing media. They are designed and intended only for such uses.

CHEMICAL FORMULA OF COMPONENTS:

	<u>CAS Number</u>
clinoptilolite $K_vCa_xMg_y(NH_4)_z[Al_6Si_{30}O_{72}]-24H_2O$ where $0 \leq (v+x+y+z) \leq 6$ and where $0 \leq (v, x, y, \text{ or } z) \leq 6$	None
calcium apatite $Ca_{10-x}M_x(PO_4)_{6-y}(A)_y(OH)_{2-z}(CO_3)_z$ where M and A are substituted anions, cations where x, y and z are stoichiometric coefficients	12167-74-7
fluorapatite $Ca_{10}(F_2)(PO_4)_5(CaCO_3)_x$	1306-05-4
calcium carbonate $CaCO_3$	
magnesium carbonate $MgCO_3$	

POTENTIAL HAZARDOUS INGREDIENTS (typical):

	<u>Percent</u>	<u>CAS</u>
fluorides, as F	0.1-0.2	_____
crystalline silica (quartz, opal-cristobalite)	0.05-10.0	14808-60-7

TRANSPORTATION CODES AND REGULATORY REFERENCES:

U.S. DOT CLASS not regulated by Department of Transportation
 WHMIS CLASS (Canada) not controlled

Material will most appropriately be Class 50, item number 48515 of the NMFC classification reference, "zeolite" for truck transport.

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PHYSICAL DATA:

Melting point	not applicable
Vapor Pressure, mm Hg	not applicable
Solubility in water	negligible
pH, 1% slurry	neutral, not applicable
Bulk density, loose	50-55 lb/cf
specific gravity, particles	1.5 to 3.1
percent volatile	not applicable
appearance	white to tan with black flecks
odor	odorless

FIRE AND EXPLOSION HAZARD INFORMATION:

Flash point	not applicable
Flammable limits	not applicable
crystalline thermal stability	to ~750 C (or ~1382 F)

Extinguishing: Use any extinguishing media required for surrounding fire. Product is non-flammable. When heated to temperatures above 1800°F it may release small amounts of toxic and/or irritating phosphorus oxides or fluorides. When heated to temperatures above 200 F it may release small amounts of ammonia gas or oxides of nitrogen.

Protective gear: Firefighters and emergency personnel should use self-contained breathing apparatus and full protective clothing.

Note: the dominant ingredient is clinoptilolite, a non-flammable alumino-silicate mineral; it will not flash or burn; it contains no volatile organics.

HEALTH INFORMATION:

Clinoptilolite not listed in any of the following:

	OSHA subpart Z, IARC monograph, ACGIH TLVList, NTP List
OSHA Permissible Exposure Limit:	none established
ACGIH TLV	none established

Based on the potential for crystalline silica, the OSHA formula for PEL's (exposure standards) should be calculated as follows:

$$\frac{10 \text{ mg/m}^3}{\% \text{ SiO}_2 + 2}$$

ROUTES OF ENTRY: Lungs (breathing) from dust; ingestion (swallowing) unlikely; skin (contact with dust)

TOXICITY DATA: The International Agency for Research on Cancer (IARC) has reported there is "limited" evidence that crystalline silica (quartz or common sand) may cause cancer in humans who have silicosis. They have classified it as a Group 2A Potential Carcinogen. Although this material may contain a small amount of quartz, extensive studies have shown no excess or unusual numbers of either silicosis or lung cancer cases in workers in the industry.

Overexposure to the crystalline quartz or related free silica forms by inhalation may lead to silicosis, which can be disabling and sometimes fatal. The injurious effects may be pulmonary fibrosis and emphysema, which typically develop unnoticed over a long period of time.

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HEALTH INFORMATION (continued):**EFFECTS OF EXPOSURE:**

SHORT TERM: May cause slight irritation of the skin, eyes, nose, or throat. May cause drying and chapping of skin due to absorption of water and oil from skin. Ingesting (swallowing) large amounts (over 1/2 pound) is very unlikely, but could cause nausea, vomiting, diarrhea, stomach and abdominal pain due to the minor amount of contained fluoride.

LONG TERM: Long term exposures to concentrations higher than recommended Permissible Exposure Limits may have potential to cause silicosis and/or lung cancer. See "toxicity data" above.

EMERGENCY AND FIRST AID PROCEDURES:

EYES: Flush thoroughly with water, including under the eyelids. Get medical attention if irritation continues.

SKIN: Wash thoroughly with soap and water.

INHALATION: Remove to fresh air. Keep warm. Get medical attention if discomfort continues.

INGESTION: If conscious, give large amounts of water to drink, and induce vomiting. Call a physician if a large amount of material is swallowed.

REACTIVITY DATA:

STABILITY: ___ Unstable ___ Stable

CONDITIONS TO AVOID: Temperatures above 1800°F

INCOMPATIBILITY (Materials to avoid):

Strong acids may cause release of toxic and irritating fluoride gases and phosphorus oxides. Strong bases may cause release of ammonia gases.

HAZARDOUS DECOMPOSITION PRODUCTS:

Fluorides, phosphorus oxides, ammonia

HAZARDOUS POLYMERIZATION:

___ may occur ___ will not occur

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Zeopro™**SPILL OR LEAK PROCEDURES:****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**

If material is uncontaminated, sweep up or collect, and reuse as product. If contaminated with other materials, handle as applicable for such other materials. Uncontaminated material spilled on grass or roadsides or similar situations should pose no known problems if filled into the top 4 to 6 inches of soil.

WASTE DISPOSAL METHOD:

Uncontaminated material can generally be disposed of by burial in an approved land disposal facility, in accordance with applicable federal, state and local regulations. Depending upon type and extent of contamination, if any, other disposal methods may be required by environmental regulatory agencies, appropriate to the contaminating material.

PERSONAL PROTECTION INFORMATION:**RESPIRATORY PROTECTION:**

A NIOSH-approved dust respirator should be used when exposure could potentially exceed the recommended Permissible Exposure Limit (PEL).

EYE PROTECTION:

Tight fitting goggles should be worn in dusty areas to reduce dust exposure to the eyes.

SKIN PROTECTION:

Gloves and protective coveralls should be used to reduce dust exposure to the skin and to avoid skin drying and chapping effects.

VENTILATION:

Local exhaust or other ventilation that will reduce dust concentrations to less than the recommended Permissible Exposure Limit.

OTHER PROTECTIVE EQUIPMENT:

Optional based upon local rules and management guidelines.

SPECIAL PRECAUTIONS:

None known other than precautions described above..

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SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Calcined Pozzolan
PRODUCT SYNONYM: Pozzolan (heated to more than 1400 degrees F)
PRODUCT USE: Soil Amendment; water retention agent
MANUFACTURED BY: Western Pozzolan Corp
417-355 Scotts Road
Doyle, NV 96109
(530) 827-2549

SECTION 2. COMPOSITION INFORMATION ON INGREDIENTS

INGREDIENTS: Pozzolan is composed of the remains of diatoms from ancient seabeds mixed with volcanic ash. The chemical composition of Calcined Pozzolan is:

	Appx %	CAS NO
Silica Dioxide	~ 70	7631-86-9
- Crystalline Silica (quartz)	~ 4	14808-60-7
- Amorphous Silica	~66	7631-86-9
Aluminum Silicate	~10	12174-11-7
Crystobillite	~2	14464-46-1
Heavy Metals	<1	1309-37-1
Respirable fraction	~6	N/A

SECTION 3. HAZARDS IDENTIFICATION

DESCRIPTION: Usually shipped in bulk or 25 lb bags. Calcined Pozzolan is a gray, tan or red colored diatomaceous earth in a granular form. Do not mix, pour or work with this product in enclosed areas. Stay upwind when using this product outdoors.

POTENTIAL HEALTH EFFECTS

-ABBREVIATIONS AND DEFINITIONS: TLV= Threshold Limit Value set by the American Conference of Governmental Industrial Hygienists; MSHA PEL= Permissible Exposure Limit set by the Mine Safety and Health Administration; OSHA PEL exposure limit established by the Occupational Safety and Health Administration; mg/m³= weight of particles per cubic meter of air; Respirable fraction=the size fraction that can be inhaled deep into the lungs, or ~4 microns in diameter for this product; ug= microgram, or one thousandth of a milligram.

-INHALATION EXPOSURE LIMITS: This product contains at least 2% by weight crystalline silica (quartz) and cristobillite. Prolonged exposure to respirable cristobillite or crystalline silica is known to cause silicosis, a scarring of the lungs which may be disabling. While individual susceptibility to a given exposure to respirable silica dust varies, the risk of silicosis and the severity of the diseases are clearly related to the concentration and duration (usually years) of exposure.

Exposures associated with proper uses of this product(s) should be well below the permissible exposure limits when used as directed; however, employers should perform their own workplace testing to determine actual worker exposure levels. The following are some exposure limits that apply to crystalline silica, total dust and other components of this product.

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<u>Component</u>	<u>TLV</u>	<u>MSHA PEL</u>	<u>OSHA PEL</u>
Total dust	10 mg/m ³	<u>30 mg/m³</u> (%SiO ₂ + 2)	<u>30 mg/m³</u> (%SiO ₂ + 2)
Respirable dust	3 mg/m ³	<u>10 mg³/m³</u> (%SiO ₂ + 2)	<u>10 mg/m³</u> (%SiO ₂ + 2)
Respirable crystalline silica (quartz)	0.01 mg/m ³	0.1 mg/m ³ (proposed)	0.1 mg/m ³ (prop)

Note: Use one half these listed exposure values to calculate worker exposure to cristobalite.

SKIN CONTACT: Prolonged handling may cause skin irritation.

EYE CONTACT: Dust can cause eye irritation; quartz dust can cause corneal scratches.

INGESTION: Not applicable under normal conditions of use

SECTION 4. FIRST AID MEASURES

EXPOSURE via INHALATION: Remove to fresh air. If bronchial irritation occurs, keep employee away from dust until irritation abates.

SKIN IRRITATION: Wash affected areas with soap and water. Use lotion before and after exposure.

EYE CONTACT: Remove contact lenses. Flush eyes, including under eyelids, with large amounts of water. If irritation persists, get medical attention.

INGESTION: Not likely under ordinary use.
All health effects mentioned are chronic.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable. **HAZARDOUS COMBUSTION PRODUCTS:** None
FLAMMABLE LIMITS: Not combustible. **AUTOIGNITION TEMPERATURE:** Not applicable.
FIRE EXTINGUISHING MEDIA: Not applicable.

SECTION 6. ACCIDENTAL RELEASE RESPONSE MEASURES

Use dustless (HEPA) vacuum. Do not sweep. If necessary, use water spray to wet down and minimize dust generation. Wear approved respirator, if necessary.

SECTION 7. HANDLING AND STORAGE

Do not work in closed space with visible dust present without a respirator. Use dust control techniques and practice good housekeeping. Do not use this product for sandblasting.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide local exhaust or enclosures as necessary to meet OSHA requirements for dust control. Use wet methods, if appropriate, to reduce generation of dust.

SKIN PROTECTION: None required.

RESPIRATORY PROTECTION: Wear appropriate NIOSH/OSHA approved respirator with dust cartridge when permissible exposure limit may be exceeded.

HAZARD COMMUNICATION: Workers must be aware of the hazards mentioned herein, how to control dust from this product and be provided proper Personal Protection Equipment (PPE).

EYE PROTECTION: Recommend goggles or safety glasses for nuisance dust and silica.

SYMPTOMS OF EXPOSURE: There are few symptoms of exposure; possibly coughing and throat irritation from prolonged or excessive exposure.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: No odor; tan soil.

PHYSICAL STATE:	Solid	BOILING POINT:	Not applicable
PH:	~7.0	MELTING POINT:	~1,800°F
VAPOR PRESSURE:	Not applicable	SOLUBILITY IN WATER:	~0.5%
VAPOR DENSITY:	Not applicable	SPECIFIC GRAVITY:	~ 2.5

SECTION 10. STABILITY AND REACTIVITY

STABILITY: Crystalline silica is incompatible with halogens (chlorine, fluorine, etc.) and oxidizing agents. Silica will dissolve in Hydrofluoric Acid and produce toxic gas.

CONDITIONS TO AVOID: Visible dust.

INCOMPATIBILITY (MATERIALS TO AVOID): This material is incompatible with halogens, acids and other strong oxidizers. Mixture with hydrofluoric acid can result in liberation of toxic gas.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

CRYSTALLINE SILICA: Crystalline silica is classified by the International Agency for Research of Cancer (IARC) as a human carcinogen Group 1. Respirable crystalline silica has been classified by the National Toxicology Program (NTP) as a substance which may reasonably be anticipated to be a carcinogen. Acute Silicosis may occur with exposures to very high concentrations of Respirable silica over a short period of time. Symptoms are coughing and shortness of breath. Acute Silicosis is a fatal disease.

SECTION 12. DISPOSAL CONSIDERATIONS

This product is not considered hazardous waste under Federal Hazardous Waste Regulations 40 CFR 261. Please be advised, however, state and local requirements for waste disposal may be different from federal regulations. Dispose of as inert solid in landfill or by other procedures in accordance with local, state and federal regulations.

SECTION 13. TRANSPORT INFORMATION

This product is not a DOT hazardous material.

SECTION 14. REGULATORY INFORMATION

OSHA: Dust generated from mixing, applying or otherwise using this product may be hazardous if inhaled.

TSCA: This product is not TSCA regulated.

SARA 313: None.

RCRA: If discarded in its purchased form, this product would not be a hazardous waste. Under RCRA, however, it is the responsibility of the product user to determine at the time of disposal whether a material containing this product or derived from this product should be classified as a hazardous waste.

CALIFORNIA PROP 65: Airborne particles of respirable crystalline silica are known by the State of California to cause cancer. The California Chronic Inhalation Reference Exposure Level (REL) for respirable crystalline silica is 0.03 mg/m³.

CANADIAN WHMIS: This is not a controlled product under WHMIS.

SECTION 15. OTHER INFORMATION

HMIS RATING: Health – 1; Flammability – 0; Reactivity – 0

MSDS REVISION SUMMARY: This MSDS is in ANSI format, with new information in many sections. Read this information carefully before using the product.

IMPORTANT: The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. Buyer assumes all risk of use, storage and handling of product in compliance with applicable federal, state and local laws and regulations. Western Pozzolan Corp and its subsidiaries make no warranty of any kind, express or implied, concerning the accuracy or completeness of the information and data herein. The implied warranties of merchantability and fitness for a particular purpose are specifically excluded.

Additional information can be obtained from www.u-s-silica.com.