

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade name: Terra Bella; includes all colors including Crystal Series and Granite Fill 2000
General use: Engineered Granite Filler

Manufacturer Name

ACS International, Inc.
4775 S. Third Avenue
Tucson, AZ 85714

Emergency Information

Emergency Telephone: 1-800-669-9214
M–Th 7 a.m. to 4:30 p.m. F 7 a.m. to 11 a.m.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Abbr.	CAS No.	Weight %	Class	ACGIH TLV	OSHA PEL	Other Limits
Alumina try-hydrate	Al (OH) 3	21645-51-2	20–40%		N/A	10	10
Filler*			60–80%				15 mg/M3 (total)
Quartz**	SiO ₂	148-08-60-7	1–10% of Filler Weight *Total dust <1%	6 mg/ M ³		80 mg/M ³	

*Filler is propriety, trade secret ingredients. Filler consists of natural semi-precious gemstones, minerals and aggregate minerals. With the exception of quartz minerals, all remaining ingredients are considered non-hazardous.

With the **exception of Antiqua Blue, Hematite Gold, Red, Green, and Blue Crystal Series colors, **all remaining** Terra Bella colors have a form of quartz in various sizes and types in the filler matrix. Read the hazards regarding silica.

3. HAZARDS IDENTIFICATION**Most Important Hazards:**

Forms of crystalline silica (quartz) in Terra Bella include: Amethyst, Citrine, Obsidian, and aggregates called Ruby Red and Desert Gold, which have the potential to contain trace amounts of quartz. It (Terra Bella) is not flammable, combustible or explosive. It does not cause burns or severe skin or eye irritation. A single exposure will not result in serious adverse health effects.

Crystalline silica (quartz) is not known to be an environmental hazard.

Crystalline silica (quartz) is incompatible with hydrofluoric acid, fluorine, chlorine trifluoride or oxygen difluoride.

Specific Hazards: Quartz ingredients are considered hazardous under the OSHA Hazard Communications Standard (29 CFR 1910.1200). All other ingredients in Terra Bella are non-hazardous.

Potential health effects

Primary routes of exposure: Eye Contact—Yes; Inhalation—Yes; Skin—Yes; Ingestion—No; Skin Absorption—No

Symptoms of acute overexposure:

Skin: Not a known skin irritant.

Eyes: Crystalline silica (quartz) may cause abrasion of the cornea.

Inhalation:

- Silicosis. Breathable (dust) crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs. Silicosis may be progressive; it may lead to disability and death.
- Lung Cancer Crystalline silica (quartz) inhaled from occupational sources is classified as carcinogenic to humans.
- Tuberculosis Silicosis increases the risk of tuberculosis.

- d. Autoimmune and Chronic Kidney Diseases Some studies show excess numbers of cases of scleroderma, connective tissue disorders, lupus, rheumatoid arthritis, chronic kidney diseases and end-stage kidney disease in workers exposed to breathable crystalline silica.
- e. Non-Malignant Respiratory Diseases (other than silicosis). Some studies show an increased incidence in chronic bronchitis and emphysema in workers exposed to breathable crystalline silica.

Ingestion: Not applicable under normal industrial situations

4. FIRST AID MEASURES

Skin: Not a skin irritant.

Eyes: May cause eye irritation. If contact lenses are present, remove. Immediately flush eyes with running water for a minimum of 15 minutes. Seek medical attention if irritation persists.

Inhalation: Inhalation of dust may produce respiratory tract irritation, characterized by burning, sneezing and coughing. Remove individual to fresh air and allow to rest. Obtain medical attention if breathing remains labored.
No specific first-aid is necessary since the adverse health effects associated with exposure to crystalline silica (quartz) result from chronic exposures. If there is a gross inhalation of crystalline silica (quartz), remove the person immediately to fresh air, give artificial respiration as needed, seek medical attention as needed.

Ingestion: Not applicable under normal industrial situations. Give large quantities of water to induce vomiting. Seek medical attention.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Water—Yes Carbon Dioxide—Yes Dry Chemical—Yes Foam—Yes
Alcohol Foam—No Use a self-contained breathing apparatus approved by NIOSH for all fires.

Flash Point: N/A

Explosive limits in air: N/A

Unusual Fire and Explosion Hazard:
Generally non-flammable. In a sustained fire, product components may degrade to form carbon monoxide, hydrogen cyanide, and other hazardous byproducts.

NFPA Classification: Flammable: 0 Health: 0 Reactivity: 0 Specific Hazards: 0

6. ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Wear appropriate personal protective equipment.

Spill Control: For small spills vacuum or scoop-up material for recovery or disposal in a sanitary landfill.
Avoid dust producing conditions and use good ventilation.

7. HANDLING AND STORAGE

Handling precautions:

Avoid direct contact with eyes. Do not breathe dust in concentrations above established limits. After handling, always wash hands thoroughly with soap and water before eating, drinking, or smoking. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels low.

Storage:

Store in a dry, cool and well ventilated area. Avoid damaging storage containers.
Storage color code: Orange, general storage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Store/use in a well ventilated area. Mechanical ventilation is recommended.

Personal Protection Equipment

- Respiratory:** Wear a NIOSH approved filtering face piece dust mask wear ventilation is not adequate with particulate filters in atmosphere to 10X the PEL. Use in a well ventilated area.
- Eye:** Safety glasses with side shields are recommended.
- Skin:** Where skin exposure is likely to occur, long sleeved clothing is recommended. Gloves are also recommended. May cause dry irritated skin.
- Exposure Limits:** See Section 2.

9. PHYSICAL AND CHEMICAL PROPERTIES

- | | | | | | |
|--------------------------|--|-----------------------|---------|-----------------------|------------------|
| Form: | Granular solid | Color: | Various | Odor: | None |
| Specific Gravity: | Various | Boiling Point: | N/A | Melting Point: | 1517° F (825° C) |
| Solubility: | 0.001 gm in 100 ml water, soluble in dilute acids. Quartz minerals will dissolve in hydrofluoric acid and produce a corrosive gas – silicon tetrafluoride. | | | | |

10. STABILITY AND REACTIVITY

- Stability:** This product is stable under ordinary conditions.
- Incompatibility:** Contact with powerful oxidizing agents, such as fluorine, chlorine trifluoride and oxygen difluoride, may cause fires.
- Decomposition:** In a sustained fire, calcium carbonate can produce calcium oxide fumes and liberates carbon dioxide.

11. TOXICOLOGICAL INFORMATION

- A. **SILICOSIS:** The major concern is silicosis, caused by the inhalation and retention of respirable crystalline silica dust. Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute.
- Chronic or Ordinary Silicosis (often referred to as Simple Silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis.
- Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF).
- Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pulmonale).
- Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and progression is more rapid.
- Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.
- B. **B. CANCER**
- IARC - The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz and cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans (Group 1)*." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution

of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates..." (1997).

NTP - The National Toxicology Program's Eleventh Annual Report on Carcinogens classifies "silica, crystalline (respirable size)" as a known human carcinogen.

OSHA - Crystalline silica (quartz) is not regulated by the U. S. Occupational Safety and Health Administration as a carcinogen.

C. AUTOIMMUNE DISEASES: Several studies have reported excess cases of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis -- among silica-exposed workers. For a review of the subject, the following may be consulted: "Occupational Exposure to Crystalline Silica and Autoimmune Disease", Environmental Health Perspectives, Volume 107, Supplement 5, pp. 793-802 (1999); "Occupational Scleroderma", Current Opinion in Rheumatology, Volume 11, pp. 490-494 (1999).

D. TUBERCULOSIS: Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: Occupational Lung Disorders, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); "Risk of pulmonary tuberculosis relative to silicosis and exposure to silica dust in South African gold miners," Occup Environ Med., Volume 55, pp.496-502 (1998).

E. KIDNEY DISEASE: Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silica-exposed workers. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis", Nephron, Volume 85, pp. 14-19 (2000).

F. NON-MALIGNANT RESPIRATORY DISEASES The reader is referred to Section 3.5 of the NIOSH Special Hazard Review cited below, for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema and small airways disease. There are studies that disclose an association between dusts found in various mining occupations and non-malignant respiratory diseases, particularly among smokers. It is unclear whether the observed associations exist only with underlying silicosis, only among smokers, or result from exposure to mineral dusts generally (independent of the presence or absence of crystalline silica, or the level of crystalline silica in the dust).

12. ECOLOGICAL INFORMATION

Ecotoxicity: Low toxicity for humans or animals under normal conditions of use. This product is water soluble.

13. DISPOSAL CONSIDERATIONS

Waste disposal or recycling: Recover and place material in a suitable container for intended use or disposal. Recycle when possible.

14. TRANSPORT INFORMATION

DOT/TDG Classification: Not controlled.

15. REGULATORY INFORMATION

U.S. Regulatory Guides:

TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All other ingredients are not considered hazardous.

RCRA: None of the product ingredients are considered hazardous waste under RCRA. Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: None of the product ingredients are considered hazardous under CERCLA. Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): None of the product ingredients are considered hazardous under the SARA Title III. Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

Clean Air Act: None of the ingredients in Terra Bella are ozone depleting substances.

NTP: Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

OSHA Carcinogen: No ingredient

California Proposition 65: Crystalline silica (airborne particles of respirable size) is classified as a substance known to the State of California to be a carcinogen. All other ingredients are non-carcinogens under California health and safety guides.

California Inhalation Reference Exposure Level (REL): California established a chronic REL of 3 ug for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

CANADA

Domestic Substances List: All ingredients in Terra Bella are naturally occurring substances, are on the Canadian DSL.

WHMIS Classification: D2A

OTHER

EINECS No.: 238-878-4

R-phrases:

R 40/20: Limited evidence of a carcinogenic effect/ Harmful by inhalation (Quartz silica dust)

R 48/20: Danger of serious damage to health by prolonged exposure/Harmful by inhalation (Quartz silica dust)

R36: Irritating to eyes. R42: May cause sensitization by inhalation.

S-phrases:

S22: Do not breathe substance.

S38: In case of insufficient ventilation wear suitable respiratory equipment.

S25: Avoid contact with eyes.

16. OTHER INFORMATION

National Fire Protection Association (USA) Ratings:

Health: 0 Flammability: 0 Reactivity: 0

Store in a cool, dry, well-ventilated area. Keep containers closed. Prolonged exposure to moisture will lead to caking of the product. No hazard entailed, but will result as a detriment in handling.

Dissolves in strong acids.

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