

SAFETY DATA SHEET

Revision Date: 4/13/16

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **WHITE ARMOR GRANULES**
 PRODUCT GRADE/TYPE : **WA 10**
 SDS NUMBER : J253-WA-G-022
 PRODUCT USE : White armor granules are used for its reflectivity in roof coatings.
 MANUFACTURER : National Coatings Corporation
 1201 Calle Suerte
 Camarillo, CA 93012
www.nationalcoatings.com
 PRODUCT INFORMATION : 1-800-423-9557
 CHEMTREC NORTH AMERICA : 1-800-424-9300
 CHEMTREC INTERNATIONAL : 703-527-3887

SECTION II - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Hazard Category	Signal Word	Hazard Statement	Pictogram
Carcinogen, Category 1A	Danger	H350- May cause cancer by inhalation. Causes damage to lungs through prolonged or repeated exposure by inhalation.	

GHS Precaution Phrases:

Hazard Category	Prevention	Response	Storage	Disposal
Carcinogen, Category 1A	P201-Obtain special instructions before use P202-Do not handle until all safety precautions have been read and understood P281-Use personal protective equipment as required.	P308+P313-If exposed or concerned: Get medical attention.	P405-Store Locked up	P501-Dispose of content/container...in accordance with local/regional/national/international regulation (to be specified)

SECTION III - COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS No.	Weight %
SiO ₂ (Quartz)	14808-60-7	40-55
P2O ₅	1314-56-3	5-15
Al ₂ O ₃	1344-28-1	10-20
CaO	1305-78-8	10-20
K ₂ O	12136-45-7	1-5
MgO	1309-48-4	2-15
Fe ₂ O ₃	1309-37-1	≤0.5
Na ₂ O		≤ 4.0

SECTION IV - FIRST AID MEASURES

Eye Contact: Eye irritation by mechanical abrasion. Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from eyeball to ensure thorough rinsing. Get immediate medical attention.

- Skin Contact:** Itching or burning of the skin. Immediately flush the skin with plenty of water while removing contaminated clothing and shoes. Get immediate medical attention.
- Inhalation:** Dust may irritate the nose, throat and respiratory tract by mechanical abrasion. Coughing, sneezing and shortness of breath may occur following unprotected exposure in excess of suggested limits. Remove exposed person from source of exposure to fresh air.
- Ingestion :** If ingested, do not induce vomiting unless directed to do so by a medical personnel. Get medical attention.

SECTION V – FIRE-FIGHTING MEASURES

Suitable Extinguishing Media : Noncombustible. Use media appropriate for surrounding materials for packaging.
Specific hazards arising from the chemical: Noncombustible. No hazardous thermal decomposition.
Special protective action for fire-fighters: None required.

SECTION VI – ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Use personal protective equipment.
Keep people away from and upwind of spill/leak.
- Environmental Precautions:** No specific precautions. Report releases to regulatory authorities if required by local, state and federal regulations.
- Methods of Cleaning up:** Avoid dry sweeping. Do not use compressed air to clean spilled sand or ground silica. Use water spraying/flushing or ventilated or HEPA filtered vacuum cleaning system, or wet before sweeping. Dispose of in closed containers.

SECTION VII – HANDLING AND STORAGE

Precautions for safe handling:
Fold and flatten empty bags carefully to reduce dust generation. Avoid breathing dust, vapor or mist. Do not rely on your sight to determine if dust is in the air. **Respirable crystalline silica dust may be in the air without visible dust cloud.** Use only with adequate exhaust ventilation and dust collection to reduce respirable crystalline silica dust levels to below the permissible exposure limit (“PEL”). Maintain and test ventilation and dust collection equipment. Use available work practices to control dust exposures, such as water sprays. Do not permit dust to collect on the walls, floors, sills, ledges, machinery or equipment. Use personal protective equipment in handling and observe personal hygiene after use of the product. . Wash thoroughly after handling . Avoid contact with skin or clothing. Avoid contact with eyes.

Where necessary to reduce exposures below the PE or other applicable limit (if lower than PEL), wear a respirator approved for silica containing dust when using, handling, storing or disposing of this product or bag. Participate in training, exposure monitoring, and health surveillance programs to monitor potential adverse health effects that may be caused by breathing respirable crystalline silica. The OSHA Hazard Communication Standard, 29 CFR Sections 1910.1200, 1915.1200, 1917.28, 1926.59 and 1928.21, and state and local workers community “right-to-know” laws and regulations should be strictly followed.

Conditions for safe storage : Keep container closed when not in use.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters:

Component	CAS #	Regulation	Type of Listing	Occupational Exposure Limits
Quartz	14808-60-7	ACGIH OSHA (PEL) NIOSH	TWA (8 hour) TWA	0.025 mg/m ³ (respirable fraction) <u>10 mg/m³ %SiO₂+2</u> (respirable dust) <u>30 mg/m³ %SiO₂ +2</u> (Total dust) 0.05 mg/m ³ (respirable dust)

If crystalline silica is heated to more than 870°C, quartz can change to a form of crystalline silica known as tridymite; if crystalline silica is heated to more than 1470°C quartz can change to a form of crystalline silica known as cristobalite. Tridymite and cristobalite have one-half of the OSHA PEL for crystalline silica (quartz).

Engineering Controls: : Dust level in excess of appropriate exposure limits should be reduced by all feasible engineering controls. Including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee work stations. Mechanical local exhaust ventilation at point of containment release.

Protective Measures : Employees should wash their hands and face before eating, drinking or using tobacco products. Educate and train employees in the safe use and handling of this product. EMERGENCY SHOWERS AND EYE WASH STATIONS SHOULD BE AVAILABLE.

Eye/face Protection : Approved safety glasses with side shields.

Skin Protection : No special clothing required. Use suitable protection considering the work environment and exposure risk.

Respiratory Protection : Wear suitable respirator (MSHA/NIOSH approved or equivalent) where exposure limits are exceeded. If it is not possible to reduce airborne exposure levels to below the OSHA PEL or other applicable limit with ventilation, use the table below to assist you in selecting respirators that will reduce personal exposures to below the OSHA PEL. This table is part of the NIOSH Respirator Selection Logic, 2004, Chapter III, Table 1, "Particulate Respirators. The full document can be found at www.cdc.gov/niosh/npptl/topics/respirators; the user of this SDS is directed to that site for information concerning respirator selection and use. Check for the assigned protection factor (APF) which is the maximum anticipated level of protection provided by each of type of respirator worn in accordance with an adequate respiratory protection program.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White, granular of various shapes
Odour:	Odorless
Odour threshold:	Not Applicable
pH:	6-8
Melting point/freezing point:	approx.. 1700°C
Boiling Point/boiling range:	4046 oF/2230 oC
Flash Point:	Not applicable-Fully oxidized, will not burn
Evaporation Rate:	Not applicable
Flammability:	Not applicable
Upper/Lower Flammability or explosive limits:	Not applicable
Vapor Pressure:	Not applicable
Vapor density	Not applicable
Relative density:	2.5- 2.65
Solubility: in water	Negligible/insoluble
Partition Coefficient: n-octanol/water:	Not applicable
Auto-ignition temperature:	Fully oxidized, will not burn
Decomposition temperature:	Not applicable
Viscosity:	Not applicable
Moh's Hardness	5.8 Min.

Note: The above data are typical values and must not be construed as a specification.

SECTION X – STABILITY AND REACTIVITY

Reactivity:	Non-reactive/Inert
Chemical Stability:	Stable
Possibility of hazardous reactions:	None known.
Conditions/Materials to avoid:	No known materials to avoid
Incompatible Materials:	None known.
Hazardous decomposition:	None know. Product is stable in water.

SECTION XI – TOXICOLOGICAL INFORMATION

Crystalline silica (quartz) : LD50 oral rat > 22,500 mg/kg

Acute effects of exposure:

Inhalation: Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath.

Ingestion : Ingestion is an unlikely route of exposure. If dust is swallowed, it may irritate the mouth and throat.

Skin/EyeContact: No adverse effects are expected. Particulates may cause abrasive injury in the eyes.

Chronic Toxicity: Prolonged inhalation of respirable crystalline silica may cause lung disease, silicosis, lung cancer and other effects as indicated below.

A. Silicosis:

Silicosis can exist in several forms, chronic (or ordinary), accelerated or acute:

Chronic or Ordinary Silicosis is the most important form of silicosis, and can occur after many years (10 to 20 or more) of prolonged repeated inhalation of 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)** which is characterized by lung lesions greater than 1 centimeter. Complicated silicosis or PMF symptoms if present, are shortness of breath and cough. 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 lung disease (cor pulmonale).

Accelerated silicosis can occur with prolonged repeated inhalation of 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 after the repeated inhalation of very high concentrations of respirable crystalline silica over a short time period, sometimes as short as few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough, weakness and weight loss. Acute silicosis is fatal.

B. Cancer:

IARC- The International Agency for Research on Cancer (“IARC”) concluded that “crystalline silica in the form of quartz or cristobalite dust is carcinogenic to humans (Group 1)”. For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, “A Review of Human Carcinogens: Arsenic, Metals, Fibers and Dusts” (2011).

NTP classifies “Silica, Crystalline (respirable size)” as Known to be human carcinogens.

C. Autoimmune Diseases:

Several studies have reported excess cases of several autoimmune disorders-scleroderma, systemic lupus erythematosus, rheumatoid arthritis—among silica-exposed workers.

D. Tuberculosis:

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to tuberculosis bacteria. Individuals with chronic silicosis have a three-fold higher risk of contracting tuberculosis than similar individuals without silicosis.

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:

Please see the reference below for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema and small airways disease.

Reference: NIOSH Hazard Review-Occupational Effect of Occupational Exposure to Respirable Crystalline Silica published in 2002; summarizes and discusses the medical and epidemiological literature on the health risks and diseases associated with occupational exposures to respirable crystalline silica. The NIOSH Hazard Review is available from NIOSH-Publications Dissemination, 4676 Columbia Parkway, Cincinnati, OH 45226, or through the NIOSH website, www.cdc.gov/niosh/topics/silica, then click on the link “NIOSH Hazard Review: Health Effects of Occupational Exposure to Respirable Crystalline Silica”.

Other References:

***Fishman’s Pulmonary Disease and Disorders, Fourth Edition, Chapter 57. “Coal Workers’ Lung Diseases and Silicosis”

***www.federalregister.gov/articles/2013/09/12/2013-20997/occupational-exposure to respirable -crystalline-silica (for a summary of respirable crystalline silica health effects in connection with OSHA’s Proposed Rule regarding occupational exposure to respirable crystalline silica).

SECTION XII – ECOLOGICAL INFORMATION

Ecotoxicity: Crystalline Silica (quartz) is not known to be ecotoxic.

Persistence and Degradability, Bioaccumulative Potential, Mobility in Soil: Not applicable. Product is made from naturally occurring, abundant, innocuous mineral.

SECTION XIII – DISPOSAL INFORMATION

Discard any product, residue, disposable container of liner in full compliance with national regulations.

Waste Disposal Method:

Waste disposal should be in accordance with existing federal, state and local environmental laws.

Packaging: Dust formation in residues in packaging should be avoided and suitable worker protection assured. Empty packaging materials are suitable for recycling. Place in closed containers to avoid dust generation.

SECTION XIV – TRANSPORT INFORMATION

UN Number : None
UN proper Shipping Name : Not Regulated
Transport Hazard Class : None
Packing Group : None
Environmental Hazards : None

Transport in bulk (According to Annex II of MARPOL 73/78 and the IBC Code): Not determined
Special Precautions : No special precautions.

SECTION XV – REGULATORY INFORMATION

Unites States TSCA Inventory (US.TSCA): Crystalline silica appears on the EPA TSCA inventory under the CAS no. 14808-60-7

CERCLA Information (40CFR302.4): Release of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to the state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title Section 304.

RCRA : This product is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 C FR §261 et seq.

SARA TITLE III, Sections 302 or 313 (Emergency Planning)

This material does not contain any Extremely Hazardous Substance (EHS) component t in excess of the Threshold Planning Quantity (TPQ) listed in EPA’s List of List and.

SARA TITLE III, Sections 304 (Emergency Release Notification)

Having no EHS component in this material as in Section 302, there’s no threat of an accidental release that exceeds the Reportable Quantity (RQ) to notify SERCs, LEPCs and fire departments for all affected region as well as the National Response Center.

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.

California Inhalation Reference Exposure Level (REL): California established a chronic-non-cancer effect REL of 3µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no non-cancer 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.

Pennsylvania Worker and Community Right To Know Act: Quartz-Hazardous under the Act, but not a special hazardous or environmental hazardous substance.

Texas Commission on Environmental Quality: The Texas CEQ has established chronic and acute Reference Values and short term and long term Effects Screening Levels for crystalline silica (Quartz). The information can be accessed through www.tceq.texas.gov.

CANADA: **WHMIS** Classification : D2A

China : Silica is listed on the IECSC inventory or exempt from notification requirements.

New Zealand: silica is liste on the HSNO inventoy or exempt from notification requirements.

Philippines: Listed for Philippine Inventory of Chemicals and Chemical Substances (PICCS).

Taiwan: Silica is listed on the CSNN inventory or exempt from notification requirements.

SECTION XVI –OTHER INFORMATION

HMIS Rating:

Health	Flammability	Physical Hazard
*	0	0

*See Sections II, VIII and XI of this Safety Data Sheet.

Legend:

Acronym	Meaning
ACGIH	American Conference of Governmental Hygienists
OSHA	Occupational Safety Health Administration
SARA	Superfund Amendment Reauthorization Act
TRI	Toxic Release Inventory
GHS	Globally Harmonized System (of Classification and Labeling of Chemicals)
DOT	Department of Transportation
IMDG	International Maritime Dangerous Goods
ICAO	International Civil Aviation Organization
IATA	International Air Transport Association

The information in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. The information relates only to the specific material designated and may not be valid for such material used in combination with or any other material in any process, unless specified in the test.

Version #: GHS-022

Revision Date: 4/14/16

Supersedes Last Revision: 1/21/16

This SDS adheres to the standards and regulatory requirements of the United States and has been written under the guidance of the Globally harmonized System of Classification and Labeling of Chemicals.

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