SAFETY DATA SHEET

Following Regulation 1910.1200

SDS Number: 382 Date of first issue: 18 September 2019 Date of last revision: 21 February 2022

1 - Identification of product

a - Product identifier used on the label

Tradenames: EST Compression Paper

b - Other means of identification

SVF PAPER

c - Recommended use of the chemical and restrictions on use

Application as thermal insulation, heat shields, heat containment, gaskets and expansion joints in industrial furnaces, ovens, kilns, boilers and other process equipment and in the aerospace, automotive and appliance industries, and as passive fire protection systems and firestops. (Please refer to specific technical data sheets for more information)

d - Name, address, and telephone number

Morgan Advanced Materials
P. O. Box 923; Dept. 300
Augusta, GA 30903-0923
Telephone: 706-796-4200

e - Emergency Phone Number

For Product Stewardship and Emergency Information:
Hotline - 1-800-722-5681
Fax - 706-560-4054

For additional SDSs and to confirm this is the most current SDS for the product, visit our web page www.morganthermalceramics.com or send a request to MT.NorthAmerica@morganplc.com

2 - Hazard Identification

a - Classification of the chemical in accordance with paragraph (d) of §1910.1200

Not classifiable according to 2012 US Hazard Communication Standard (29CFR 1910.1200).

b - Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

None.

Emergency Overview

c - Describe any hazards not otherwise classified that have been identified during the classification process

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.
These effects are usually temporary.

d - Mixture Rule

Not applicable.

3 - Composition / Information On Ingredients

a - Composition table

COMPONENTS	CAS NUMBER	% BY WEIGHT
Inorganic Inert Binder	Proprietary	10-20
Alkaline-Earth Silicate Wool[(1)]	436083-99-7	50-65
Acrylic polymers	not applicable	25-35

[(1)] **CAS definition:** Alkaline Earth Silicate (AES) consisting of silica (50-82 wt %), calcia and magnesia (18-43 wt %), alumina, titania and zirconia (less than 6 wt %), and trace oxides. This CAS composition also covers Morgan Thermal Ceramics products Calcium-Magnesium-Silicate Wool (CAS no. 329211-92-9) and Calcium-Magnesium-Zirconium-Silicate Wool (CAS no. 308084-09-5).

b - Common Name

d - Impurities and Stabilizing Additives

Not applicable.

4 - First-Aid measures

a - Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion

Eyes

If eyes become irritated, flush immediately with large amounts of lukewarm water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not rub eyes.

Skin

Wash affected area gently with soap and water. Skin cream or lotion after washing may be helpful.

Respiratory Tract

If respiratory tract irritation develops, move the person to a dust free location. See Section 8 for additional measures to reduce or eliminate exposure.

Gastrointestinal

If gastrointestinal tract irritation develops, move the person to a dust free environment.

c - Indication of immediate medical attention and special treatment needed, if necessary

If symptoms persist, seek medical advice.

5 - Fire-fighting measures

a - Suitable (and unsuitable) extinguishing media and

Packaging and surrounding materials may be combustible. Use extinguishing agent suitable for surrounding combustible materials.

c - Special Protective Equipment and Precautions for Firefighters

NFPA Codes: Flammability: 0 Health: 1 Reactivity: 0 Special: 0

b - Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

During sustained fire, irritating and/or toxic gases may be generated by combustion.

6 - Accidental Release Measures

a - Personal precautions, protective equipment, and emergency procedures

Minimize airborne dust. Compressed air or dry sweeping should not be used for cleaning. See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines.

b - Methods and materials for containment and cleaning up

Pick up large pieces and use a vacuum cleaner. If brushes are used, ensure that the area is wetted down first. Do not use compressed air for clean up. Do not allow to become windblown.

7 - Handling and storage

a - Precautions for safe handling

Limit the use of power tools unless in conjunction with local exhaust. Use hand tools whenever possible. Frequently clean the work area with HEPA filtered vacuum or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up.

b - Conditions for safe storage, including any incompatibilities

Product packaging may contain residue. Do not reuse.

c - empty containers

Product packaging may contain residue. Do not reuse.

8 - Risk Management Measures / Exposures Controls / Personal Protection

a - OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available

EXPOSURE GUIDELINES			
MAJOR COMPONENT	***OSHA PEL***	***ACGIH TLV***	***MANUFACTURER'S REG***
Alkaline-Earth Silicate Wool	None Established	None Established	1 f/cc, 8-hr TWA
acrylic polymer	None Established	None Established	None
Inorganic Inert Binder	None Established; treat as nuisance dust - 15 mg/m^3 (total dust) or 5 mg/m^3 (respirable dust).	None Established	None

OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL)
Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility and comply with local regulations. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection.

b - Appropriate Engineering Controls

Use engineering controls such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs and materials handling equipment designed to minimize airborne fiber emissions.

c - Individual protection measures, such as personal protective equipment

PPE - Skin

Wear personal protective equipment (e.g gloves), as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed clothing home. If soiled work clothing must be taken home, employees should be informed on best practices to minimize non-work dust exposure (e.g., vacuum clothes before leaving the work area, wash work clothing separately, and rinse washer before washing other household clothes.

PPE - Eye

As necessary, wear goggles or safety glasses with side shields.

PPE – Respiratory

When engineering and/or administrative controls are insufficient to maintain workplace concentrations below the appropriate REG/PEL/REL, the use of appropriate respiratory protection, pursuant to the requirements of OSHA Standards 29 CFR 1910.134 and 29 CFR 1926.103, is recommended. A NIOSH certified respirator with a filter efficiency of at least 95% should be used. The 95% filter efficiency recommendation is based on NIOSH respirator selection logic sequence for exposure to particulates. Selection of filter efficiency (i.e. 95%, 99% or 99.97%) depends on how much filter leakage can be accepted and the concentration of airborne contaminants. Other factors to consider are the NIOSH filter series N, R or P. (N) **N**ot resistant to oil, (R) **R**esistant to oil and (P) oil **P**roof. These recommendations are not designed to limit informed choices, provided that respiratory protection decisions comply with 29 CFR 1910.134. The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed , on a case by case basis, by a qualified industrial hygienist.

You may also refer to health and safety information on the HTIW Coalition website www.HTIWCoalition.org

9 - Physical and chemical properties

a - Appearance	White odorless material
b -Odor	No odor
c - Odor Threshold	Not applicable
e- pH	Not applicable
d - Melting Point	1275 - 1300°C (2327 - 2372°F)
f- Initial Boiling Point/Range	Not applicable
g- Flashpoint	Not applicable
h - Evaporation Rate	Not applicable
i - Flammability	Not applicable
j - Upper/Lower Flammability or Explosive Limits	Not applicable
k - VAPOR PRESSURE	Not applicable
l - VAPOR DENSITY	Not applicable
m - Solubility	Not determined
n - Relative Density	>2
o - Partition Coefficient: n-Octanol/water	Not determined
p - Auto-ignition temperature	Not applicable
q - Decomposition Temperature	Not available
r - Viscosity	Not applicable

10 - Stability and Reactivity

a - Reactivity

Stable under conditions of normal use.

b - Chemical Stability

This material is stable under all conditions of use and storage.

c - Possibility of Hazardous Reaction

Not applicable.

d - Conditions to Avoid

Please refer to handling and storage advise in Section 7.

e - Incompatible Materials

Not known

f - Hazardous decomposition products

During first heating, oxidation products from the organic binder such as carbon monoxide, carbon dioxide and hydrocarbons might be emitted in a temperature range from 180º C to 600º C. It is recommended to ventilate the room until gases and fumes have disappeared. Avoid exposure to high concentrations of gas or fumes.

11 - Toxicological information

a - TOXICOKINETICS, METABOLISM AND DISTRIBUTION

Exposure is predominantly by inhalation or ingestion.

Man made vitreous fibres of a similar size to AES have not been shown to migrate from the lung and/or gut and do not become located in other organs of the body.

b - Acute Toxicity

IRRITANT PROPERTIES
Superwool fibers are negative when tested using approved methods (Directive 67/548/EEC, Annex 5, Method B4). Like all man-made mineral fibers and some natural fibers, fibers contained in this product can produce a mild mechanical irritation resulting in temporary itching or rarely, in some sensitive individuals, in a slight temporary reddening. Unlike other irritant reactions, this is not the result of allergy or chemical skin damage but is caused by mechanical effects.

c - Epidemiology

d - Toxicology

Fibers contained in the products listed in the title have been designed to be rapidly cleared from lung tissue. This low biopersistence has been confirmed in many studies on AES using EU protocol ECB/TM/27(rev 7). When inhaled, even at very high doses, they do not accumulate to any level capable of producing a serious adverse biological effect. In lifetime chronic studies there was no exposure-related effect more than would be seen with any "inert" dust. Subchronic studies at the highest doses achievable produced at worst a transient mild inflammatory response. Fibers with the same ability to persist in tissue do not produce tumors when injected into the peritoneal cavity of rats.

International Agency for Research on Cancer and National Toxicology Program

Not applicable.

12 - Ecological information

No data available.

c - Bioaccumulative potential

No bioaccumulative potential.

d - Mobility in soil

No information for the product.

e - Other adverse effects (such as hazardous to the ozone layer

No adverse effects of this material on the environment are anticipated.

13 - Disposal Considerations

Waste Management and Disposal

Unless wetted, such a waste is normally dusty and should therefore be properly sealed in containers for disposal. At some authorized disposal sites dusty waste may be treated differently, in order to ensure that they are dealt with promptly and to avoid them being windblown. Check for any national and/or regional regulations which may apply.

Additional information

This product, as manufactured, is not classified as a listed or characteristic hazardous waste according to U. S. Federal regulations (40 CFR 261). Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under U. S. Federal regulations, it is the waste generator's responsibility to properly characterize a waste material, to determine if it is a "hazardous" waste. Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

14 - Transport information

a - UN number.

Hazard Class: Not Regulated United Nations (UN) Number: Not Applicable
Labels: Not Applicable North America (NA) Number: Not Applicable
Placards: Not Applicable Bill of Lading: Product Name

b - UN proper shipping name

Not applicable.

c - Transport hazard class(es)

Not applicable.

d - Packing group, if applicable

Not applicable.

e - Environmental hazards (e.g., Marine pollutant (Yes/No))

No.

f - Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

Not regulated.

g - Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Not applicable.

International

INTERNATIONAL
Canadian TDG Hazard Class & PIN: Not regulated
Not classified as dangerous goods under ADR (road), RID (train), IATA (air) or IMDG (ship).

15 - Regulatory information

15.1 - United States Regulations

UNITED STATES REGULATIONS
SARA Title III: This product does not contain any substances reportable under Sections 302, 304, 313 (40 CFR 372). Sections 311 and 312 apply.
OSHA: Comply with Hazard Communication Standards 29 CFR 1910.1200 and 29 CFR 1926.59 and Respiratory Protection Standards 29 CFR 1910.134 and 29 CFR 1926.103.
TSCA: AES wools have been assigned several CAS numbers; however, they are not required to be listed on the TSCA inventory.
CERCLA: AES wool contains fibers with an average diameter greater than one micron and thus is not considered a CERCLA hazardous substance.
CAA: AES wool contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.
California: Glasswool fibers (airborne particles of respirable size) are listed in the State of California as a chemical known to cause cancer.
States: AES wools are not known to be regulated by any State. If in doubt, contact your local regulatory agency.

15.2 - International Regulations

Canada WHMIS: No Canadian Workplace Hazardous Materials Information System categories apply to this product.
Canadian EPA: All substances in this product are listed, as required, on the Domestic Substance List (DSL).
European Union: These products are exonerated from any carcinogenic classification in the countries of the European Union under the provisions of Nota Q of the European Commission Directive 97/69/EC.

16 - Other Information

initial statement

Devitrification

PRECAUTIONARY MEASURES TO BE TAKEN AFTER SERVICE UPON REMOVAL
High temperature insulating wool (HTIW) is typically used in insulation applications to keep temperature exposure at 900°C or above in a closed space. The exposure temperature maximum occurs at the hot face surface of the insulation. The heat exposure on the insulation decreases from the hot face to the cold face as the insulation "insulates itself". As a result, only thin layers of the hot face surface of the insulation become devitrified and respirable dust generated during removal operations typically do not contain detectable levels of crystalline silica (CS).

Toxicological evaluation of the effect of the presence of CS in artificially heated HTIW material has not shown any increased toxicity in vitro and in vivo. The results from different factor combinations such as increased brittleness of fibers or micro crystals embedded in the glass structure of the fiber and therefore not biologically available, may explain the lack of toxicological effects. IARC evaluation as provided in Monograph 68 is not relevant since CS is not biologically available in after-service HTIW.

Product Stewardship Program

High concentrations of fibers and other dusts may be generated when after-service products are mechanically disturbed during removal. Therefore, ECFIA and HTIW Coalition recommend:
a) Controlled measures are taken to reduce dust emissions and
b) All personnel directly involved wear an appropriate respirator to minimize and comply with local regulatory limits.

For more information, call the Morgan Thermal Ceramics Product Stewardship Hotline (800-722-5681).

HMIS HAZARD RATING

HMIS Health: 1
HMIS Flammable: 0
HMIS Reactivity: 0
HMIS Personal Protective: To be determined by user

TECHNICAL DATA SHEETS

Revision Summary

Update to section 1

MSDS prepared by

SDS Prepared By: MORGAN THERMAL CERAMICS ENVIRONMENTAL, HEALTH & SAFETY DEPARTMENT

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