SAFTEY DATA SHEET

Section 1, Identification

Product Identifier	: Starvest, Maxavest, Investra, CX-71, Chromecast, Supercast PT
Other Common Names	: Phosphate Casting Investment
Manufacturer	: **Emdin International Corporation** **15841 Business Center Drive** **Irwindale, California, USA 91706** **Telephone Number 1-626-813-3740** **Emergency Number 1-626-404-2723** ***Monday - Friday, 8:00 A.M. – 4:00 P.M.***
Recommended Use	: Dental crown and bridge casting investment. Dental chrome partial casting investment. Jewelry platinum casting investment.
Restrictions on Use	: Professional Applications Only

Section 2, Hazard(s) identification

Hazard Classification	Carcinogenicity Category 1A Specific Target Organ Toxicity, Repeated Exposure Category 1
Signal Word	**Danger**
Hazard Statement(s) *Physical*	Not Classified.
Health	**H350** May cause cancer. **H372** Causes damage to organs through prolonged or repeated exposure.
Pictograms	
Precautionary Statement(s) *General*	**P102** Keep out of reach of children.
Prevention	**P201** Obtain special instructions before use. **P202** Do not handle until all safety precautions have been read and understood. **P260** Do not breathe dust/fume/gas/mist/vapors/spray. **P264** Wash hands thoroughly after handling. **P270** Do not eat, drink or smoke when using this product. **P280** Wear protective gloves/protective clothing/eye protection/face protection.
Response	**P308 + P313** IF exposed or concerned: Get medical attention. **P314** Get Medical advice/attention if you feel unwell.
Storage	**P405** Store locked up.

Disposal	**P501** Dispose of contents/container in accordance with local/regional/national/international regulation.
Hazard(s) Not Otherwise Classified (HNOC)	May cause mechanical irritation of the eyes, skin, nose and throat. Repeated exposure may cause skin dryness or cracking.

Section 3, Composition/information on ingredients

Chemical Identity	Common Name	CAS Number	WT%
Crystalline Silica, Quartz	Silicon Dioxide	14808-60-7	40 – 90
Crystalline Silica, Cristobalite	Silicon Dioxide	14464-46-1	0 – 40
Phosphates		Proprietary Mixture	5 – 20
Magnesium Oxide		1309-48-4	5 – 20

Acceptable concentration ranges have been withheld under claims of a trade secret.

There are no additional ingredients present which, within the current knowledge of the manufacturer and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Exact percentage of composition has been withheld due to batch-to-batch variation and because the SDS is used for a group of substantially similar mixtures.

Section 4, First-aid measures

Description of Necessary First-Aid Measures

Inhalation

No special measures required.
If inhaled, remove to fresh air.
Get medical attention if adverse health effects persist or are severe.

Skin Contact

No special measures required.
In case of contact, flush contaminated skin with plenty of water.
Get medical attention if adverse health effects persist or are severe.

Eye Contact

No special measures are required.
In case of contact with eyes, rinse immediately with plenty of water.
Get medical attention if adverse health effects persist or are severe.

Ingestion

Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

Most Important Symptoms/Effects, Acute and Delayed

Inhalation

Acute (immediate)

May cause mild mechanical irritation of nose, throat and respiratory system
Symptoms include sneezing, coughing and/or shortness of breath.

Chronic (delayed)

Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis.
Symptoms include coughing and/or shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function.

Skin Contact

Acute (immediate)

May cause mild mechanical irritation of skin.
Symptoms include itchiness.

Chronic (delayed)

Excessive skin contact may cause skin dryness.
Symptoms include inflammation, scaling, itchiness, and cracked skin.

Eye Contact	
Acute (immediate)	May cause mild mechanical irritation of eyes. Symptoms include pain, a gritty feeling in the eye, tearing, and/or redness.
Chronic (delayed)	Excessive eye contact may cause corneal abrasion. Symptoms include pain, a gritty feeling in the eye, tearing, redness, sensitivity to light, headache, and/or blurred / double vision.
Ingestion	
Acute (immediate)	No known adverse effects expected from normal, incidental ingestion.
Chronic (delayed)	Excessive ingestion may cause gastrointestinal blockage. Symptoms include cramping and belly pain that comes and goes, vomiting, bloating, a hard belly, and/or constipation.
Indication of Any Immediate Medical Attention and Special Treatment Needed	
Notes to Physician	All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5, Fire-fighting measures

Suitable Extinguishing Media	Use an extinguishing media appropriate for the surrounding materials.
Specific Hazards Arising From the Chemical	Not flammable, combustible, or explosive. Produces oxides of magnesium, nitrogen, and phosphorus on thermal decomposition.
Special Protective Actions for Firefighters	Wear appropriate protective equipment and self-contained breathing apparatus with a full face-piece operated in positive pressure mode. Use standard firefighting procedures and consider the hazards of other involved materials. Cool material exposed to heat with water spray and remove if no risk is involved. Collect contaminated firefighting water separately. Keep away from drains, surface and ground water.

Section 6, Accidental release measures

Personal Precautions, Protective Equipment, and Emergency Procedures	Avoid generating airborne dust during clean-up. See Section 8 of the SDS for Personal Protective Equipment. No specific emergency precautions.
Environmental Precautions	Keep away from drains, surface and ground water. Report releases as required by local and national authorities.
Methods and Materials for Containment and Cleaning Up	Vacuum spilled material using vacuums equipped with HEPA filters. Flush area with water to remove residual material. Collect in labeled containers and seal securely.

Section 7, Handling and storage

Precautions for Safe Handling	Minimize dust production when mixing, or opening and closing bags. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Observe good industrial hygiene practices. Use appropriate lifting techniques.
Conditions for Safe Storage, Including Any Incompatibilities	Store locked up. Store away from incompatible substances or mixtures: Strong acids, strong bases, strong oxidizers, phosphorous pentachloride, and hydrofluoric acid.

Section 8, Exposure controls/personal protection

Control Parameters

Chemical Identity	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)
Crystalline Silica, Quartz	10 mg/m^3 (respirable) %SiO2 + 2 30 mg/m^3 (total) %SiO2 + 2	0.025 mg/m^3 (resp.)	0.05 mg/m^3 (resp.)
Crystalline Silica, Cristobalite	5 mg/m^3 (respirable) %SiO2 + 2 15 mg/m^3 (total) %SiO2 + 2	0.025 mg/m^3 (resp.)	0.05 mg/m^3 (resp.)
Phosphates	5 mg/m3 (respirable) 15 mg/m3 (total)	3 mg/m^3 (respirable) 10 mg/m^3 (inhalable)	Not listed.
Magnesium Oxide	15 mg/m^3 (total)	10 mg/m^3 (inhalable)	Not listed.

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

Appropriate Engineering Controls — Use local exhaust ventilation to maintain air concentrations below occupational exposure standards.

Individual Protection Measures, Such as Personal Protective Equipment (PPE)

Eye/Face Protection — Safety glasses with side shields or goggles are recommended.

Skin/Body Protection — For prolonged or repeated skin contact use suitable protective gloves. Long sleeved shirts and pants are recommended for workers suffering from dermatitis or sensitive skin.

Respiratory Protection — If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

Thermal Hazards — None.

Section 9, Physical and chemical properties

Appearance	
Physical State	Solid.
Form	Powder.
Color	White.
Odor	Odorless.
Odor Threshold	Not applicable.
pH	6 – 8
Melting Point / Freezing Point	Not applicable.
Initial Boiling Point and Boiling Range	Not applicable.
Flash Point	Not applicable.
Evaporation Rate	Not applicable.
Flammability (solid, gas)	Not applicable.

Upper/lower Flammability or Explosive Limits	
Flammability Limit – Lower (%)	Not applicable.
Flammability Limit – Upper (%)	Not applicable.
Explosive Limit – Lower (%)	Not applicable.
Explosive Limit - Upper (%)	Not applicable.
Vapor Density	Not applicable.
Relative Density	2 – 3
Solubility in Water	Partially soluble.
Partition Coefficient (n-octanol/water)	Not applicable.
Auto-Ignition Temperature	Not applicable.
Decomposition Temperature	> 3092 °F (1700 °C)
Viscosity	Not applicable.

Section 10, Stability and reactivity

Reactivity	Not available.
Chemical Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	Exposure to strong acids produces reactions that are vigorous and produce large amounts of heat. Contact with strong oxidizers may cause fires. Contact with phosphorous pentachloride will incandesce brilliantly. Crystalline silica (quartz) will dissolve in hydrofluoric acid and produce a corrosive gas, silicon tetrafluoride. Magnesium oxide heated to the point of volatilization (i.e., >1700 °C), will produce magnesium oxide fumes.
Conditions to Avoid	Avoid unintentional contact with water. Product hardens and produces heat
Incompatible Materials	Strong acids, strong bases, strong oxidizers, phosphorous pentachloride, and hydrofluoric acid.
Hazardous Decomposition Products	Silicon tetrafluoride. Oxides of magnesium, nitrogen, and phosphorus.

Section 11, Toxicological information

Information on the Likely Routes of Exposure	
Inhalation	May cause mild mechanical irritation of nose, throat and respiratory system Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis.
Skin Contact	May cause mild mechanical irritation of skin. Excessive skin contact may cause skin dryness.
Eye Contact	May cause mild mechanical irritation of eyes. Excessive eye contact may cause corneal abrasion.
Ingestion	Excessive ingestion may cause gastrointestinal blockage.
Symptoms Related to the Physical, Chemical and Toxicological Characteristics	
Inhalation	Sneezing, coughing and/or shortness of breath. Coughing, shortness of breath, wheezing, and/or non-specific chest illness and reduced pulmonary function.
Skin Contact	Itchiness. Inflammation, scaling, itchiness, and/or cracked skin.
Eye Contact	Pain, a gritty feeling in the eye, tearing, and/or redness. Pain, a gritty feeling in the eye, tearing, redness, sensitivity to light, headache, and/or blurred / double vision.

Ingestion	Cramping and belly pain that comes and goes, vomiting, bloating, a hard belly, and/or constipation.

Delayed and Immediate Effects and also Chronic Effects from Short- and Long-term Exposure

Acute Toxicity	Not expected to be a hazard under normal conditions of intended use.
Irritation	Not available.
Corrosion	Not available.
Sensitization	Not available.
Mutagenicity	Not available.
Reproductive Toxicity	Not available.
Teratogenicity	Not available.
Specific Target Organ Toxicity (single exposure)	Not available.
Specific Target Organ Toxicity (repeated exposure)	Crystalline Silica, Quartz is listed as STOT-RE (Category 1). Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. Crystalline Silica, Cristobalite is listed as STOT-RE (Category 1). Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function.
Aspiration Hazard	Due to the physical form of the product it is not an aspiration hazard.

Numerical Measures of Toxicity

Chemical	Organism	Data
Crystalline Silica, Quartz	Rat Terrestrial Rodent	LD50 Oral > 22,500 mg/kg
Crystalline Silica, Cristobalite	Rat Terrestrial Rodent	LD50 Oral > 22,500 mg/kg
Magnesium Oxide	Rat Terrestrial Rodent	LD50 Oral > 3990 mg/kg

Carcinogenicity

Crystalline Silica (Quartz) (CAS 14808-60-7)
OSHA - Not listed.
IARC - “Carcinogenic to Humans” (Group 1).
NTP - “Known to be a Human Carcinogen".

Crystalline Silica (Cristobalite) (CAS 14464-46-1)
OSHA - Not listed.
IARC - “Carcinogenic to Humans” (Group 1).
NTP - “Known to be a Human Carcinogen".

Section 12, Ecological information

Ecotoxicity

The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Chemical	Organism	Data
Crystalline Silica, Quartz	Carp Aquatic Fish	LC50 (72 h) > 10,000 mg/L

Persistence and Degradability Not expected.

Bioaccumulative Potential Not expected.

Mobility in Soil	Not expected.
Other Adverse Effects	Not expected.

Section 13, Disposal considerations

Disposal Instructions	Dispose of contents/container in accordance with local/regional/national/international regulation.
Hazardous Waste Code	Not regulated.

Section 14, Transport information

DOT	Not regulated.
TDG	Not regulated.
IATA/ICAO	Not regulated.
IMDG/IMO	Not regulated.
Special Precautions for User	Transport in closed containers that are upright and secure.
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)	This product is provided only in non-bulk containers.

Section 15, Regulatory information

US Federal Regulations *Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)*	Not listed.
Clean Air Act Section 602 Class I Substances	Not listed.
Clean Air Act Section 602 Class II Substances	Not listed.
DEA List I Chemicals (Precursor Chemicals)	Not listed.
DEA List II Chemicals (Essential Chemicals)	Not listed.
Safe Drinking Water Act (SDWA)	Not listed.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.
SARA Section 302/304 (extremely hazardous substance)	Not listed.
SARA Section 311/312 (hazardous chemical)	Crystalline Silica, Quartz (CAS 14808-60-7) Crystalline Silica, Cristobalite (CAS 14464-46-1) Delayed (Chronic) Health Hazard
SARA Section 313 (TRI reporting)	Not regulated.

US State Regulations	
Massachusetts Toxics Use Reduction Act (TURA)	Crystalline Silica, Quartz (CAS 14808-60-7) Crystalline Silica, Cristobalite (CAS 14464-46-1)
New Jersey Worker and Community Right-to-Know Act	Crystalline Silica, Quartz (CAS 14808-60-7) Crystalline Silica, Cristobalite (CAS 14464-46-1) Magnesium Oxide (CAS 1309-48-4)
Pennsylvania Worker and Community Right to Know Act	Crystalline Silica, Quartz (CAS 14808-60-7) Crystalline Silica, Cristobalite (CAS 14464-46-1) Magnesium Oxide (CAS 1309-48-4)
Rhode Island Right-to-Know Hazardous Substance List	Crystalline Silica, Quartz (CAS 14808-60-7) Magnesium Oxide (CAS 1309-48-4)
California Proposition 65 WARNING! This product contains a chemical known to the State of California to cause cancer.	Crystalline Silica, Quartz (CAS 14808-60-7) Crystalline Silica, Cristobalite (CAS 14464-46-1)

Section 16, Other information

Issue Date	October 19, 2015
Revision Date	November 10, 2015
Version #	02
Consumer Warning	When mixed with water this product can become very hot. Encasing of any body part can cause serious burns that may require surgical removal of affected tissue and/or amputation of encased body part.
Key/legend to Abbreviations and Acronyms	**ACGIH -** American Conference of Governmental Industrial Hygienists **ANSI** - American National Standards Institute **CERCLA** - Superfund or Comprehensive Environmental Response, Compensation, and Liability Act of 1980 **DEA -** Drug Enforcement Administration **DOT -** Department of Transportation **IARC** - International Agency for Research on Cancer **IATA -** International Air Transport Association **IBC -** International Building Code **ICAO -** International Civil Aviation Organization **IMDG -** International Maritime Dangerous Goods **IMO -** International Maritime Organization **MARPOL 73/78 -** Marine Pollution 1973/1978 **MSHA** - Mine Safety and Health Administration **NIOSH -** National Institute for Occupational Safety and Health **NTP** - National Toxicology Program **OSHA -** Occupational Safety and Health Administration **PEL -** Permissible Exposure Limit **REL** - Recommended Exposure Limit **SARA -** Superfund Amendments and Reauthorization Act of 1986 **SDS -** *Safety Data Sheet* **TGD -** Transportation of Dangerous Goods **TLV** - Threshold Limit Value **TRI -** Toxics Release Inventory **VOC** - Volatile Organic Compounds
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.