Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

*
1 Identification

· **Product identifier**

· **Trade name: ST-SP/621-N2A**
· **Other means of identification**

· **Article number:** 170E
· **Restrictions** Restricted to industrial or professional use.
· **Application of the substance / the mixture** Flux
· **Uses advised against**
Avoid dry cutting, blasting, or dust generation. Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
HarbisonWalker International Steelcasting USA Inc.
4113 Witmer Rd
Niagara Falls, NY, 14305
+1 412 375-6743

· **Information department:**
SDS@thinkHWI.com
+33 (0)2 59 60 31 14
sds.information@calderys.com
+33 (0)2 59 60 31 13
· **Emergency telephone number:**
CHEMTREC EMERGENCY
1-800-424-9300
US/CAN ONLY

*
2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS08 Health hazard

Carcinogenicity 1A H350 May cause cancer. Route of exposure: Inhalation.

GHS05 Corrosion

Eye damage 1 H318 Causes serious eye damage.
· **Additional information:**
Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, which is a progressive and irreversible lung disease. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

Trade name: ST-SP/621-N2A

(Contd. of page 1)

· **Hazard pictograms**

GHS05 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
calcium oxide
Quartz (SiO2)

· **Hazard statements**
H318 Causes serious eye damage.
H350 May cause cancer. Route of exposure: Inhalation.

· **Precautionary statements**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a poison center/doctor.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Information pertaining to particular dangers for man and environment:**

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 0
Reactivity = 0

· **Classification according to (d)(1)(ii) of § 1910.1200**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

13983-17-0	Wollastonite (Ca(SiO3))	30–60% *
7789-75-5	calcium fluoride	7–13% *
471-34-1	calcium carbonate	≥5–≤10% *
497-19-8	sodium carbonate	3–7% *
1305-78-8	calcium oxide	≥3–≤5% *

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

Trade name: ST-SP/621-N2A

(Contd. of page 2)

1344-28-1	aluminium oxide	1–5% *
1309-48-4	magnesium oxide	1–5% *
546-93-0	Magnesite	0.5–1.5% *
68476-25-5	Feldspar-group minerals	0.5–1.5% *
14808-60-7	Quartz (SiO2)	≥0.5–≤1% *

* Actual concentration ranges are withheld as a trade secret.

· **Additional information:**
The product may also contain wollastonite as a raw material, in varying amounts. Wollastonite is a naturally occurring mineral which can contain impurities in its natural form. The wollastonite used in this product is tested by the supplier for the presense of asbestos. Those tests ensure the absense of asbestos in the supplied wollastonite at levels above 60 ppm (0.0060%) mass ratio with 99% confidence. This means the product could contain traces of asbestos, depending on the percentage of wollastonite used in the product, from zero to 36 ppm (0.0036% mass ratio) with 99% confidence. This is well below the OSHA bulk limit of 1000 ppm (0.1% mass ratio).
The exact chemical identity and/or percentage (concentration) of the composition has been withheld as a trade secret.

*
4 First-aid measures

· **Description of first aid measures**
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
In case of skin contact, wash with soap and water. Get medical attention if irritation persists.
· **After eye contact:**
Rinse opened eye for several minutes under running water. Then consult a doctor.
Chemical burns must be treated by a physician.
· **After swallowing:** If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed**
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

*
6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. For personal protection, see section 8 of the SDS.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

Trade name: ST-SP/621-N2A

(Contd. of page 3)

See Section 13 for disposal information.

*
7 Handling and storage

· **Precautions for safe handling**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions.
· **Information about protection against explosions and fires:**
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

*
8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

13983-17-0 Wollastonite (Ca(SiO3))	
TLV	Long-term value: 1 mg/m³ A4, inh. fraction, E
7789-75-5 calcium fluoride	
PEL	Long-term value: 2.5 mg/m³ as F
REL	Long-term value: 2.5 mg/m³ as F
TLV	Long-term value: 2.5 mg/m³ as F, A4; BEI
471-34-1 calcium carbonate	
PEL	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV	TLV withdrawn
1305-78-8 calcium oxide	
PEL	Long-term value: 5 mg/m³
REL	Long-term value: 2 mg/m³
TLV	Long-term value: 2 mg/m³
1344-28-1 aluminium oxide	
PEL	Long-term value: 15*; 5** mg/m³ *Total dust; ** Respirable fraction

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

Trade name: ST-SP/621-N2A

(Contd. of page 4)

REL	Long-term value: 10* 5** mg/m³ as Al*Total dust**Respirable/pyro powd./welding f.
TLV	Long-term value: 1* mg/m³ as Al; *as respirable fraction, A4
1309-48-4 magnesium oxide	
PEL	Long-term value: 15* mg/m³ fume; *total particulate
TLV	Long-term value: 10* mg/m³ *as inhalable fraction, A4
546-93-0 Magnesite	
PEL	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV	TLV withdrawn
14808-60-7 Quartz (SiO2)	
PEL	Long-term value: 0.05* mg/m³ *resp. dust; 30mg/m3/%SiO2+2
REL	Long-term value: 0.05* mg/m³ *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m³ *respirable particulate matter, A2

· **Regulatory information**
TLV: Guide to Occupational Exposure Values (TLV)
PEL: Guide to Occupational Exposure Values (OSHA PELs)
REL: Guide to Occupational Exposure Values (NIOSH RELs)

· **Ingredients with biological limit values:**	
7789-75-5 calcium fluoride	
BEI	2 mg/L Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific) 3 mg/L Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific)

· **Regulatory information** BEI: Guide to Occupational Exposure Values (BEI)
· **Additional information:**
The lists that were valid during the creation were used as basis.
Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

Trade name: ST-SP/621-N2A

(Contd. of page 5)

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**
Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Wear safety glasses with side shields (or goggles).

· **Body protection:**

Standard industrial clothing is sufficient for room temperature installations (ISO 6942). Do not shake out work clothes. Do not remove dust with compressed air.

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Physical state**	Solid
· **Color:**	Dark
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined
· **Melting point/Melting range:**	Undetermined
· **Boiling point/Boiling range:**	2,000 °C (35.600 °F)
· **Flammability:**	Not determined
· **Explosion limits:**	
· **Lower:**	Not determined
· **Upper:**	Not determined
· **Flash point:**	Not applicable
· **Decomposition temperature:**	Not determined
· **pH-value:**	Not applicable
· **Viscosity:**	
· **Kinematic:**	Not applicable
· **Dynamic:**	Not applicable
· **Solubility in / Miscibility with**	
· **Water:**	Soluble.
· **Partition coefficient (n-octanol/water):**	Not determined

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 6)

· **Vapor pressure:**	Not applicable
· **Vapor pressure:**	
· **Density:**	Not determined
· **Relative density**	Not determined
· **Bulk density:**	850 kg/m³
· **Vapor density**	Not applicable
· **Particle characteristics**	Not determined

· **Other information**	
· **Appearance:**	
· **Form:**	Granulate
· **Important information on protection of health and environment, and on safety.**	
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Solvent content:**	
· **Water:**	≤0.0 %
· **VOC content:**	0.00 %
· **Solids content:**	100.0 %
· **Change in condition**	
· **Evaporation rate**	Not applicable.

*
10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:**
Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure.
· **Hazardous decomposition products:** No dangerous decomposition products known.

*
11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:** Based on available data, the classification criteria are not met.
· **Primary irritant effect:**
· **on the skin:** Prolonged skin contact may cause temporary irritation.
· **on the eye:** Causes serious eye damage.
· **Sensitization:** No sensitizing effects known.
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **Specific target organ toxicity - single exposure**
Based on available data, the classification criteria are not met.
· **Specific target organ toxicity - repeated exposure**
Based on available data, the classification criteria are not met.
· **Aspiration hazard** Not applicable
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
· **Interactive effects** No interactive effects between components are known.

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

Trade name: ST-SP/621-N2A

(Contd. of page 7)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
13983-17-0	Wollastonite (Ca(SiO3))	3
7789-75-5	calcium fluoride	3
14808-60-7	Quartz (SiO2)	1

· **Additional information**
In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk.." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

· **NTP (National Toxicology Program)**		
14808-60-7	Quartz (SiO2)	K

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

*
12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.

*
13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

Trade name: ST-SP/621-N2A

(Contd. of page 8)

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

*
14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	not regulated
· **UN proper shipping name**	
· **DOT, IMDG, IATA**	not regulated
· **Transport hazard class(es)**	
· **DOT, ADN, IMDG, IATA**	
· **Class**	not regulated
· **Packing group**	
· **DOT, IMDG, IATA**	not regulated
· **Environmental hazards:**	Not applicable
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable
· **Special precautions for user**	Not applicable
· **UN "Model Regulation":**	not regulated

*
15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

1344-28-1	aluminium oxide

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

14808-60-7	Quartz (SiO2)
13463-67-7	Titanium Dioxide

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 9)

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value)**		
7789-75-5	calcium fluoride	A4
1344-28-1	aluminium oxide	A4
1309-48-4	magnesium oxide	A4
14808-60-7	Quartz (SiO2)	A2
13463-67-7	Titanium Dioxide	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**	
14808-60-7	Quartz (SiO2)
13463-67-7	Titanium Dioxide

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS05 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
calcium oxide
Quartz (SiO2)
· **Hazard statements**
H318 Causes serious eye damage.
H350 May cause cancer. Route of exposure: Inhalation.
· **Precautionary statements**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a poison center/doctor.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

This information is based on our present knowledge on creation date. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:** SDS@thinkHWI.com
· **Date of previous version** 06/12/2025

(Contd. on page 11)

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/17/2026 Reviewed on 07/17/2026

Trade name: ST-SP/621-N2A

(Contd. of page 10)

· **Version number of previous version:** 1
· **Date of preparation** 07/17/2026
· **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Eye damage 1: Serious eye damage/eye irritation – Category 1
Carcinogenicity 1A: Carcinogenicity – Category 1A
· *** Data compared to the previous version altered.**