1 Identification

- Product name
  - Trade name: Boron carbide HD 20
  - Item number: 05-0120
  - CAS Number: 12069-32-8
  - EC number: 235-111-5

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier: Strem Chemicals, Inc.
    7 Mulliken Way
    NEWBURYPORT, MA 01950
    USA
    info@strem.com

- Information department: Technical Department
- Emergency telephone number:
  EMERGENCY: CHEMTREC: +1 (800) 424-9300
  During normal opening times: +1 (978) 499-1600

2 Hazard(s) identification

- Classification of the substance or mixture
  - GHS07
  Acute Tox. 4 H332 Harmful if inhaled.

- Label elements
  - GHS label elements
    The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms
    - GHS07

- Signal word Warning

- Hazard-determining components of labeling:
  none

- Hazard statements
  H332 Harmful if inhaled.

- Precautionary statements
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  - P271 Use only outdoors or in a well-ventilated area.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P312 Call a POISON CENTER/doctor if you feel unwell.

(Contd. on page 2)
Safety Data Sheet 
according to OSHA HCS

Trade name: Boron carbide HD 20

3 Composition/information on ingredients
· Chemical characterization: Substances
· CAS No. Description
  12069-32-8 none
· Identification number(s)
· EC number: 235-111-5

4 First-aid measures
· Description of first aid measures
· General information:
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· After inhalation:
  Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  In case of unconsciousness place patient stably in side position for transportation.
· After skin contact:
  Generally the product does not irritate the skin.
· After eye contact:
  Rinse opened eye for several minutes under running water.
· After swallowing:
  If symptoms persist consult doctor.
· Information for doctor:
  Most important symptoms and effects, both acute and delayed No further relevant information available.
  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.

(Contd. of page 1)
· Classification system:
· NFPA ratings (scale 0 - 4)
  Health = 3
  Fire = 0
  Reactivity = 0
· HMIS-ratings (scale 0 - 4)
  HEALTH
  Health = 2
  FIRE
  Fire = 0
  REACTIVITY
  Reactivity = 0
· Other hazards
· Results of PBT and vPvB assessment
  · PBT: Not applicable.
  · vPvB: Not applicable.

(Contd. on page 3)
6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Not required.
- Environmental precautions: Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up: Ensure adequate ventilation.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

<table>
<thead>
<tr>
<th>PAC</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAC-1</td>
<td>2.4 mg/m³</td>
</tr>
<tr>
<td>PAC-2</td>
<td>27 mg/m³</td>
</tr>
<tr>
<td>PAC-3</td>
<td>170 mg/m³</td>
</tr>
</tbody>
</table>

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Thorough dedusting.
    Ensure good ventilation/exhaustion at the workplace.
  - Information about protection against explosions and fires: No special measures required.
- 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

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures: Wash hands before breaks and at the end of work.
  - Protection of hands:
    The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the
    chemical mixture.
Trade name: Boron carbide HD 20

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.

- **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:** Safety glasses

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  **General Information**
  
  - **Appearance:**
    - **Form:** Powder
    - **Color:** Dark grey
    - **Odor:** Odorless
    - **Odor threshold:** Not determined.

  - **pH-value:** Not applicable.

  - **Change in condition**
    - **Melting point/Melting range:** 2.350 °C (36 °F)
    - **Boiling point/Boiling range:** >3.5 °C (>38 °F)

  - **Flash point:** Not applicable.

  - **Flammability (solid, gaseous):** Not determined.

  - **Ignition temperature**

    - **Decomposition temperature:** Not determined.

    - **Auto igniting:** Not determined.

    - **Danger of explosion:** Product does not present an explosion hazard.

    - **Explosion limits**
      - **Lower:** Not determined.
      - **Upper:** Not determined.

    - **Vapor pressure:** Not applicable.

    - **Density at 20 °C (68 °F):** 2.52 g/cm³ (21.0294 lbs/gal)

      - **Relative density:** Not determined.
      - **Vapor density:** Not applicable.
      - **Evaporation rate:** Not applicable.

    - **Solubility in / Miscibility with**
      - **Water:** Insoluble.

    - **Partition coefficient (n-octanol/water):** Not determined.

  - **Viscosity**
    - **Dynamic:** Not applicable.
    - **Kinematic:** Not applicable.

  - **Solvent content**
    - **Organic solvents:** 0.0 %

(Contd. on page 3)
44.1.1 VOC content: 0.0 g/l / 0.00 lb/gl

Solids content: 100.0 %

· Other information No further relevant information available.

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: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects
· Acute toxicity:
· Primary irritant effect:
· on the skin: No irritant effect.
· on the eye: No irritating effect.
· Sensitization: No sensitizing effects known.
· Additional toxicological information:
· Carcinogenic categories
· IARC (International Agency for Research on Cancer) Substance is not listed.
· NTP (National Toxicology Program) Substance is not listed.
· OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

· Toxicity
· Aquatic toxicity: No further relevant information available.
· Persistence and degradability No further relevant information available.
· Behavior in environmental systems:
· Bioaccumulative potential No further relevant information available.
· Mobility in soil: No further relevant information available.
· Additional ecological information:
· General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· Results of PBT and vPvB assessment
· PBT: Not applicable.
· vPvB: Not applicable.
13 Disposal considerations

- Waste treatment methods
  - Recommendation:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - DOT, ADN, IMDG, IATA not regulated
- UN proper shipping name
  - DOT, ADN, IMDG, IATA not regulated
- Transport hazard class(es)
  - DOT, ADN, IMDG, IATA
  - Class not regulated
- Packing group
  - DOT, IMDG, IATA not regulated
- Environmental hazards:
  - Marine pollutant: No
- Special precautions for user
  - Not applicable.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - 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):
      Substance is not listed.
    - Section 313 (Specific toxic chemical listings):
      Substance is not listed.
    - TSCA (Toxic Substances Control Act):
      Substance is listed.
    - Proposition 65
      - Chemicals known to cause cancer:
        Substance is not listed.
      - Chemicals known to cause reproductive toxicity for females:
        Substance is not listed.
### 44.1.1

- **Chemicals known to cause reproductive toxicity for males:**
  - Substance is not listed.

- **Chemicals known to cause developmental toxicity:**
  - Substance is not listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    - I (oral)
  - **TLV (Threshold Limit Value established by ACGIH)**
    - Substance is not listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    - Substance is not listed.

- **GHS label elements**
  - The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**
  - GHS07

- **Signal word** Warning

- **Hazard-determining components of labeling:**
  - none

- **Hazard statements**
  - H332 Harmful if inhaled.

- **Precautionary statements**
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  - P271 Use only outdoors or in a well-ventilated area.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P312 Call a POISON CENTER/doctor if you feel unwell.

- **National regulations:**
  - **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
  - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

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

- **Department issuing SDS:** Technical Department.
- **Contact:** Technical Director
- **Date of preparation / last revision** 07/18/2021 / -
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport 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
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
Trade name: Boron carbide HD 20

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
Acute Tox. 4: Acute toxicity – Category 4