SAFETY DATA SHEET

Product and Company Identification

Product identifier
Trade name: N-Hance™ HP40S Guar Gum
™ Trademark, Ashland or its subsidiaries, registered in various countries

Relevant identified uses of the substance or mixture and uses advised against

Details of the supplier of the safety data sheet
Ashland
P.O. Box 2219
Columbus, OH 43216
United States of America (USA)
+1-614-790-3333

EHSProductSafety@ashland.com

Emergency telephone number
1-800-ASHLAND (1-800-274-5263)

Regulatory Information Number
1-800-325-3751

Product Information
+1-614-790-3333

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Combustible Dust:

GHS label elements
Signal Word: Warning

Hazard Statements: May form combustible dust concentrations in air.

Precautionary Statements: Prevention:
Keep dust/air mixtures away from ignition sources.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS
SUBSTANCE / MIXTURE: Mixture

CHEMICAL NATURE: organic

HAZARDOUS COMPONENTS:
No hazardous ingredients

SECTION 4. FIRST AID MEASURES

GENERAL ADVICE: No hazards which require special first aid measures.

IF INHALED:
- If breathed in, move person into fresh air.
- If unconscious, place in recovery position and seek medical advice.
- If symptoms persist, call a physician.

IN CASE OF SKIN CONTACT:
- First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

IN CASE OF EYE CONTACT:
- Remove contact lenses.
- Protect unharmed eye.

IF SWALLOWED:
- Do not give milk or alcoholic beverages.
- Never give anything by mouth to an unconscious person.
- If symptoms persist, call a physician.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:
- Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
  - stomach or intestinal upset (nausea, vomiting, diarrhea)
  - irritation (nose, throat, airways)

NOTES TO PHYSICIAN:
- No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
  - Water spray
  - Foam
Specific hazards during firefighting: Organic dusts at sufficient concentration can form explosive mixtures in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: carbon dioxide and carbon monoxide, Hydrocarbons, Oxides of phosphorus, Sodium oxides

Specific extinguishing methods: Product is compatible with standard fire-fighting agents.

Further information: Standard procedure for chemical fires.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Avoid dust formation. Avoid breathing dust. Material can create slippery conditions. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions: Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

Other information: Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: Avoid dust formation. Ensure all equipment is electrically grounded and bonded before beginning transfer operations. The material can accumulate static charge and can therefore cause electrical ignition of flammable atmospheres. Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8. Maintain good housekeeping. Do not permit dust layers to accumulate, for example, on floors, ledges, and equipment, in order to avoid any potential for dust explosion hazards.

For further guidance on prevention of dust explosions, refer to National Fire Protection Association (NFPA) 654: “Standard for the Prevention of Fire and Dust Explosions, from the Manufacturing, Processing and Handling of Combustible Particulate Solids”.

**Conditions for safe storage**: No smoking.

**Materials to avoid**: No materials to be especially mentioned.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**
Contains no substances with occupational exposure limit values.

**Engineering measures**: Provide appropriate exhaust ventilation at places where dust is formed. General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

**Personal protective equipment**

**Respiratory protection**: No personal respiratory protective equipment normally required.

**Eye protection**: Safety glasses

**Skin and body protection**: Wear as appropriate: Safety shoes Wear resistant gloves (consult your safety equipment supplier).

**Hygiene measures**: Avoid breathing dust.
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: granules, powder
Physical state: solid
Colour: off-white
Odour: odourless
Odour Threshold: No data available
pH: 6.5 - 7.5
   Concentration: 1 %
   (as aqueous solution)
Melting point/freezing point: No data available
Boiling point/boiling range: No data available
Flash point: Not applicable
Evaporation rate: No data available
Flammability (solid, gas): No data available
Upper explosion limit: No data available
Lower explosion limit: No data available
Vapour pressure: No data available
Relative vapour density: No data available
Relative density: No data available
Density: 0.6 g/cm³
Solubility(ies):
   Water solubility: soluble, Limited by viscosity
Solubility in other solvents: No data available
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature : 415 °C
Thermal decomposition : No data available
Viscosity
  Viscosity, dynamic : No data available
  Viscosity, kinematic : No data available
Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY
Reactivity : No decomposition if stored and applied as directed.
Chemical stability : Stable under recommended storage conditions.
Possibility of hazardous reactions : Dust may form explosive mixture in air.
Conditions to avoid : Keep away from heat, flame, sparks and other ignition sources.
  excessive heat
  UV light.
  Exposure to sunlight.
  Exposure to moisture
Incompatible materials : Acids
  Fluorine
  Oxidizing agents
  strong bases
Hazardous decomposition products : carbon dioxide and carbon monoxide
  Sodium oxides

SECTION 11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure : Inhalation
  Skin contact
  Eye Contact
  Ingestion
**Acute toxicity**
Not classified based on available information.

**Skin corrosion/irritation**
Not classified based on available information.

**Serious eye damage/eye irritation**
Not classified based on available information.

**Product:**
Remarks: Unlikely to cause eye irritation or injury., Product dust may be irritating to eyes, skin and respiratory system.

**Respiratory or skin sensitisation**
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.
Germ cell mutagenicity
Not classified based on available information.

**Carcinogenicity**
Not classified based on available information.

**Reproductive toxicity**
Not classified based on available information.

**STOT - single exposure**
Not classified based on available information.

**STOT - repeated exposure**
Not classified based on available information.

**Aspiration toxicity**
Not classified based on available information.

**Further information**

**Product:**
Remarks: No data available

**Carcinogenicity:**

**IARC**
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**NTP**
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product: Ecotoxicology Assessment
Acute aquatic toxicity: Not classified based on available information.
Chronic aquatic toxicity: Not classified based on available information.

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
No data available

Product: Additional ecological information: No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
General advice: Dispose of in accordance with all applicable local, state and federal regulations.
Contaminated packaging: Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

<table>
<thead>
<tr>
<th>REGULATION</th>
<th>ID NUMBER</th>
<th>PROPER SHIPPING NAME</th>
<th>*HAZARD CLASS</th>
<th>SUBSIDIARY HAZARDS</th>
<th>PACKING GROUP</th>
<th>MARINE POLLUTANT / LTD. QTY.</th>
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</thead>
<tbody>
<tr>
<td>MX_DG</td>
<td>Not dangerous goods</td>
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<td></td>
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</tr>
</tbody>
</table>

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER
Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO
Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS
Not dangerous goods

TDG_INWT_C
Not dangerous goods

TDG_RAIL_C
Not dangerous goods

TDG_ROAD_C
Not dangerous goods

U.S. DOT - INLAND WATERWAYS
Not dangerous goods

CFR_RAIL_C
Not dangerous goods

U.S. DOT - ROAD
Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

| Marine pollutant | no |

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.
SECTION 15. REGULATORY INFORMATION

**EPCRA - Emergency Planning and Community Right-to-Know Act**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
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</thead>
<tbody>
<tr>
<td>SODIUM HYDROXIDE</td>
<td>1310-73-2</td>
<td>1000</td>
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</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards**

- Combustible Dust

**SARA 302**

- This material does not contain any components with a section 302 EHS TPQ.

**SARA 313**

- This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**US State Regulations**

**Pennsylvania Right To Know**

BIO POLYMER I 254504001-5912

The identity and concentration of one or more component(s) is being withheld under business confidentiality.

**New Jersey Right To Know**

BIO POLYMER I 254504001-5912

PHOSPHATE SALT 254504001-5954

The identity and concentration of one or more component(s) is being withheld under business confidentiality.

**California Prop 65**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
The components of this product are reported in the following inventories:

- **DSL**: All components of this product are on the Canadian DSL
- **AICS**: On the inventory, or in compliance with the inventory
- **ENCS**: On the inventory, or in compliance with the inventory
- **KECI**: On the inventory, or in compliance with the inventory
- **PICCS**: On the inventory, or in compliance with the inventory
- **IECSC**: On the inventory, or in compliance with the inventory
- **TSCA**: On TSCA Inventory

**Inventories**

- AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

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**SECTION 16. OTHER INFORMATION**

**Further information**
Revision Date: 02/24/2018

<table>
<thead>
<tr>
<th>NFPA: Flammability</th>
<th>HMIS III:</th>
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<tr>
<td>Instability 1</td>
<td>FLAMMABILITY 0</td>
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<tr>
<td>Special hazard.</td>
<td>PHYSICAL HAZARD 0</td>
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</table>

**NFPA Flammable and Combustible Liquids Classification**
Not applicable

**Full text of H-Statements**
Sources of key data used to compile the Safety Data Sheet
Ashland internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-
<table>
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<th>SAFETY DATA SHEET</th>
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<td>N-Hance™ HP40S Guar Gum</td>
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"Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative"