SAFETY DATA SHEET

N-Hance™ HPCG 1000 Hydroxypropyl Guar Hydroxypropyl Trimonium Chloride™ Trademark, Ashland or its subsidiaries, registered in various countries 859136

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
- Trade name: N-Hance™ HPCG 1000 Hydroxypropyl Guar Hydroxypropyl Trimonium Chloride™ Trademark, Ashland or its subsidiaries, registered in various countries
- Substance name: GUAR GPX388 INTERMEDIATE

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

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
- Combustible Dust:

GHS Label element
- Signal Word: Warning
- Hazard Statements: May form combustible dust concentrations in air.

Other hazards
None known.
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

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
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, organic compounds, hydrogen chloride, 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.
- Electrical installations / working materials must comply with the technological safety standards.

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

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

**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**: powder
- **Physical state**: solid
- **Colour**: yellow
- **Odour**: mild
- **Odour Threshold**: No data available
- **pH**: 8.5 - 10.5, 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**: No data available
- **Solubility(ies)**: Water solubility: soluble
Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
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
  isocyanates
  Oxidizing agents
  strong bases
  UV light.
Hazardous decomposition products : hydrogen chloride
  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.

Product:
No aspiration toxicity classification

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 identified as a carcinogen or potential carcinogen by OSHA.

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
No data available

Persistence and degradability

Product:
Biodegradability : Remarks: Slowly biodegradable.

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>
</tr>
</thead>
<tbody>
<tr>
<td>MX_DG</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL MARITIME DANGEROUS GOODS</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG_INWT_C</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG_RAIL_C</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG_ROAD_C</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. DOT - INLAND WATERWAYS</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFR_RAIL_C</td>
<td></td>
<td><strong>Not dangerous goods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM HYDROXIDE</td>
<td>1310-73-2</td>
<td>1000</td>
<td>500000</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazards : Fire Hazard

US State Regulations

Pennsylvania Right To Know

ALKYL GLYCOL 254504001-5231 1.00 - 5.00

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

GUAR, 2-HYDROXYPROPYL-2-HYDROXY-3-TRIMETHYLAMMONIO)PROPYLETHER, CHLORIDE 71329-50-5 90.00 - 100.00 %

WATER 7732-18-5 5.00 - 10.00 %

New Jersey Right To Know

ALKYL GLYCOL 254504001-5231 1.00 - 5.00
The identity of one or more component(s) is being withheld under business confidentiality.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guar, 2-Hydroxypropyl-2-Hydroxy-3-Trimethylammonio)Propylether, Chloride</td>
<td>71329-50-5</td>
<td>90.00 - 100.00 %</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>5.00 - 10.00 %</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>1.00 - 5.00 %</td>
</tr>
</tbody>
</table>

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:
- **TSCA**: On TSCA Inventory
- **DSL**: This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
- **AUSTR**: On the inventory, or in compliance with the inventory
- **ENCS**: On the inventory, or in compliance with the inventory
- **KECL**: Not 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

Inventories:
- AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)
### SECTION 16. OTHER INFORMATION

**Further information**  
Revision Date: 11/07/2016

<table>
<thead>
<tr>
<th>NFPA:</th>
<th>HMIS III:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>HEALTH</td>
</tr>
<tr>
<td>Health</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>FLAMMABILITY</td>
</tr>
<tr>
<td>0</td>
<td>PHYSICAL HAZARD</td>
</tr>
</tbody>
</table>

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

**Full text of H-Statements referred to under sections 2 and 3.**

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).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet:  
ACGIH : American Conference of Industrial Hygienists  
BEI : Biological Exposure Index