

<b>ASHLAND®</b>		Page: 1
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

29 CFR 1910.1200 (OSHA HazCom 2012)

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

### Product identifier

Trade name : N-Hance™ 4572  
Cationic guar  
™ Trademark, Ashland or its subsidiaries, registered in  
various countries

### Recommended use of the chemical and restrictions on use

<b>Details of the supplier of the safety data sheet</b> Ashland P.O. Box 2219 Columbus, OH 43216 United States of America  EHS Customer Requests@ashland.com	<b>Emergency telephone number</b> 1-800-ASHLAND (1-800-274-5263)  <b>Regulatory Information Number</b> 1-800-325-3751  <b>Product Information</b> 614-790-3333
--	---

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

Combustible Dust :  
  
Eye irritation : Category 2A

### GHS Label element

Hazard pictograms :



Signal Word : Warning

Hazard Statements : May form combustible dust concentrations in air.  
Causes serious eye irritation.

Precautionary Statements : **Prevention:**  
Wash skin thoroughly after handling.  
Wear eye protection/ face protection.  
**Response:**  
IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.

<b>ASHLAND®</b>		Page: 2
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

If eye irritation persists: Get medical advice/ attention.

#### Other hazards

None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : organic

#### Hazardous components

Chemical Name	CAS-No.	Classification	Concentration (%)
CATIONIC GUAR GUM, MODIFIED	65497-29-2	Eye Irrit. 2A; H319	66.52

### SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- 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 : Immediately flush eye(s) with plenty of water.  
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)  
Causes serious eye irritation.

<b>ASHLAND®</b>		Page: 3
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

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
- Unsuitable extinguishing media : High volume water jet
- 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  
Nitrogen oxides (NOx)
- Specific extinguishing methods :  
  
Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- 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 product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

<b>ASHLAND®</b>		Page: 4
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

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

---

## SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid dust formation.  
Do not breathe vapours/dust.  
Do not smoke.  
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.  
Container hazardous when empty.  
Avoid contact with skin and eyes.  
Smoking, eating and drinking should be prohibited in the application area.  
For personal protection see section 8.  
Dispose of rinse water in accordance with local and national regulations.  
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 : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
No smoking.  
Electrical installations / working materials must comply with the technological safety standards.

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

- Engineering measures : 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.  
Provide appropriate exhaust ventilation at places where dust is formed.

<b>ASHLAND®</b>		Page: 5
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

#### Personal protective equipment

##### Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

##### Eye protection

: Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

##### Skin and body protection

: Wear as appropriate:  
Safety shoes  
Dust impervious protective suit  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.  
Wear resistant gloves (consult your safety equipment supplier).

##### Hygiene measures

: Avoid breathing dust.  
Wash hands before breaks and at the end of workday.  
When using do not eat or drink.  
When using do not smoke.

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: powder
Physical state	: solid
Colour	: yellow
Odour	: odourless
Odour Threshold	: No data available
pH	: 5 - 6, 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

<b>ASHLAND®</b>		Page: 6
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

Relative vapour density	: No data available
Relative density	: No data available
Density	: No data available
Bulk density	: 631.9 - 785.4 kg/m3
Solubility(ies)	
Water solubility	: Limited by viscosity
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: 500 - 1,000 mPa.s (25 °C) 1% solution
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.
Incompatible materials	: Acids Oxidizing agents
Hazardous decomposition products	carbon dioxide and carbon monoxide Hydrocarbons Nitrogen oxides (NOx)

<b>ASHLAND®</b>		Page: 7
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

## 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.

### Product:

Remarks: May cause skin irritation in susceptible persons.

### Components:

CATIONIC GUAR GUM, MODIFIED:

Result: Not irritating to skin

### Serious eye damage/eye irritation

Causes serious eye irritation.

### Product:

Remarks: Product dust may be irritating to eyes, skin and respiratory system., Causes serious eye irritation.

### Components:

CATIONIC GUAR GUM, MODIFIED:

Result: Irritating to eyes

### 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.

<b>ASHLAND®</b>		Page: 8
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

#### 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

#### Components:

CATIONIC GUAR GUM, MODIFIED:

- Toxicity to fish : LC 50 (Cyprinus carpio (Carp)): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC 50 (Water flea (Daphnia magna)): 54 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes
- Toxicity to algae : NOEC (Blue-green algae (Anabaena flos-aquae)): > 100 mg/l  
Exposure time: 72 h  
Test Type: Growth inhibition  
Method: OECD Test Guideline 201  
GLP: yes

### Persistence and degradability

#### Components:

CATIONIC GUAR GUM, MODIFIED:

- Biodegradability : Result: Readily biodegradable  
Biodegradation: 95 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D  
GLP: yes  
Remarks: Information given is based on data obtained from similar substances.

### Bioaccumulative potential

#### Components:

No data available



<b>ASHLAND®</b>		Page: 9
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

#### Mobility in soil

##### Components:

No data available

#### Other adverse effects

No data available

##### Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life with long lasting effects.

##### Components:

### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

General advice : The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not re-use empty containers.

### SECTION 14. TRANSPORT INFORMATION

#### International transport regulations

##### REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

#### U.S. DOT - ROAD

Not dangerous goods

#### U.S. DOT - RAIL

Not dangerous goods

#### U.S. DOT - INLAND WATERWAYS

Not dangerous goods
---------------------

<b>ASHLAND®</b>		Page: 10
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

#### TRANSPORT CANADA - ROAD

Not dangerous goods

#### TRANSPORT CANADA - RAIL

Not dangerous goods

#### TRANSPORT CANADA - INLAND WATERWAYS

Not dangerous goods

#### INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

#### INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

#### INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

#### MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

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

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
SODIUM HYDROXIDE	1310-73-2	1000	694444.444444

<b>ASHLAND®</b>		Page: 11
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

**SARA 311/312 Hazards** : Fire Hazard  
Acute Health Hazard

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

**Pennsylvania Right To Know**

CATIONIC GUAR GUM, MODIFIED	65497-29-2	50.00 - 70.00 %
Polymer	75150-29-7	20.00 - 30.00 %
WATER	7732-18-5	5.00 - 10.00 %

**New Jersey Right To Know**

CATIONIC GUAR GUM, MODIFIED	65497-29-2	50.00 - 70.00 %
Polymer	75150-29-7	20.00 - 30.00 %
WATER	7732-18-5	5.00 - 10.00 %

**California Prop 65** WARNING! This product contains a chemical known to the  
State of California to cause cancer.  
COCO 68603-42-9  
DIETHANOLAMIDE

**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 : Not in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECL : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

**Inventories**

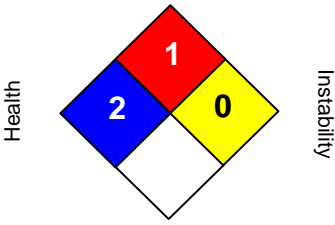
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL  
(Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

<b>ASHLAND®</b>		Page: 12
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

## SECTION 16. OTHER INFORMATION

### Further information

Revision Date: 05/21/2015

NFPA:	HMIS III:						
<p>Flammability</p> <p>Health</p> <p>Instability</p> <p>Special hazard.</p> 	<table border="1"> <tr> <td><b>HEALTH</b></td><td><b>2*</b></td></tr> <tr> <td><b>FLAMMABILITY</b></td><td><b>1</b></td></tr> <tr> <td><b>PHYSICAL HAZARD</b></td><td><b>0</b></td></tr> </table> <p>0 = not significant, 1 = Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic</p>	<b>HEALTH</b>	<b>2*</b>	<b>FLAMMABILITY</b>	<b>1</b>	<b>PHYSICAL HAZARD</b>	<b>0</b>
<b>HEALTH</b>	<b>2*</b>						
<b>FLAMMABILITY</b>	<b>1</b>						
<b>PHYSICAL HAZARD</b>	<b>0</b>						

### NFPA Flammable and Combustible Liquids Classification

Not applicable

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

H319 Causes serious eye irritation.

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

CAS : Chemical Abstracts Service (Division of the American Chemical Society).

CMR : Carcinogenic, Mutagenic or Toxic for Reproduction

FG : Food grade

GHS : Globally Harmonized System of Classification and Labeling of Chemicals.

H-statement : Hazard Statement

IATA : International Air Transport Association.

<b>ASHLAND®</b>		Page: 13
<b>SAFETY DATA SHEET</b>		Revision Date: 05/21/2015
		Print Date: 7/21/2015
		SDS Number: 000000195248
N-Hance™ 4572 Cationic guar ™ Trademark, Ashland or its subsidiaries, registered in various countries 804899		Version: 1.0

IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).

ICAO : International Civil Aviation Organization

ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”

IMDG : International Maritime Code for Dangerous Goods

ISO : International Organization for Standardization

logPow : octanol-water partition coefficient

LCxx : Lethal Concentration, for xx percent of test population

LDxx : Lethal Dose, for xx percent of test population.

ICxx : Inhibitory Concentration for xx of a substance

Ecxx : Effective Concentration of xx

N.O.S.: Not Otherwise Specified

OECD : Organization for Economic Co-operation and Development

OEL : Occupational Exposure Limit

P-Statement : Precautionary Statement

PBT : Persistent , Bioaccumulative and Toxic

PPE : Personal Protective Equipment

STEL : Short-term exposure limit

STOT : Specific Target Organ Toxicity

TLV : Threshold Limit Value

TWA : Time-weighted average

vPvB : Very Persistent and Very Bioaccumulative

WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act

DOT : Department of Transportation

FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act

HMIRC : Hazardous Materials Information Review Commission

HMIS : Hazardous Materials Identification System

NFPA : National Fire Protection Association

NIOSH : National Institute for Occupational Safety and Health

OSHA : Occupational Safety and Health Administration

PMRA : Health Canada Pest Management Regulatory Agency

RTK : Right to Know

WHMIS : Workplace Hazardous Materials Information System