



**\*\*\* MATERIAL SAFETY DATA SHEET \*\*\***

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NUMBER	50-5771
PRODUCT NAME	H-50
Manufacturer	National Starch & Chemical Company P.O. Box 6500, 10 Finderne Avenue Bridgewater, NJ 08807 USA
	EMERGENCY PHONES:
	MEDICAL: 866-359-5657 (Health & Safety Call Center-24 hours)
	TRANSPORT: CHEMTREC: 800-424-9300 (24 hours)
	CHEMTREC International: 703-527-3887 (call collect)
	Corporate Emergency Phone: 908-685-5100 (24 hours)
	MSDS Requests/Customer Service: See phone numbers in Section 16

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

CHEMICAL FAMILY	Modified Starch	CAS NUMBER	CONCENTRATION
COMPONENT			(% by weight)
None classified as hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).			

**3. HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**

Possible physical irritant from dust particles. Potential for dust explosion.  
White Powder. Starch odor

EYE	Particulates may scratch eye surfaces and cause mechanical irritation.
SKIN CONTACT	Low order of toxicity.
INHALATION	This product can produce a nuisance dust which should be maintained below a time weighted average of 10 mg/m3.
INGESTION	Low oral toxicity.

**4. FIRST-AID MEASURES**

EYE	Remove particles by irrigating with eye wash solution or clean water, holding the eyelids apart. If symptoms develop, obtain medical attention.
SKIN CONTACT	Wash skin with soap and water.
INHALATION	Remove to fresh air. Get medical attention if irritation persists.
INGESTION	None required.

**5. FIREFIGHTING MEASURES**

AUTOIGNITION	Not available
FLASH POINT	Not applicable
EXTINGUISHING MEDIA	Dry Chemical; CO2; Water Fog; Foam
SPECIAL FIREFIGHTING PROCEDURES	No special procedures are required.
FIRE & EXPLOSION HAZARDS	Minimum ignition temperature of dust cloud- approx. 390 C. Minimum explosive concentration- approx. 62 mg/l. Minimum energy to ignite cloud by electrical spark- approx. 0.045 joules.
HAZARDOUS COMBUSTION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.
LOWER EXPLOSION LIMIT (%)	Not applicable
UPPER EXPLOSION LIMIT (%)	Not applicable

**6. ACCIDENTAL RELEASE MEASURES**

SPILL AND LEAK PROCEDURES	Normal precautions for "nuisance dust" should be observed. Avoid prolonged inhalation of dust. Sweep up or vacuum up and place in suitable container for disposal.
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For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

**7. HANDLING AND STORAGE**

STORAGE TEMPERATURE	Ambient.
SENSITIVITY TO STATIC ELECTRICITY	Yes
SENSITIVITY TO MECHANICAL IMPACT	No
OTHER PRECAUTIONS	Use care to minimize dust generation in normal use conditions. Avoid dispersing the powder in the air. Prevent buildup of powder on surfaces.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

	<u>ACGIH</u>	<u>OSHA</u>	<u>Mfg Working Standard</u>
VENTILATION REQUIREMENTS	General.		

EYE PROTECTION REQUIREMENTS	Safety glasses recommended.
GLOVE REQUIREMENTS	Gloves are not normally required for foreseeable conditions of use.
CLOTHING REQUIREMENTS	Not applicable.
CHANGE/REMOVAL OF CLOTHING	Not normally required.
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS	NIOSH approved dust mask.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

PURE SUBSTANCE OR MIXTURE	Pure
PHYSICAL FORM	Powder.
COLOR	White
ODOR	Starch
ODOR THRESHOLD	Not available
MOLECULAR WEIGHT	> 10000
PH AS IS	Not applicable
pH IN (1%) SOLUTION	Approximately 6
OXIDIZING PROPERTIES	Not applicable
BOILING POINT	Not applicable
MELTING/FREEZING POINT	Not applicable
SOLUBILITY IN WATER	Soluble
PARTITION COEFFICIENT (n-octanol/water)	Not applicable
VISCOSITY	Not applicable
SPECIFIC GRAVITY (WATER=1)	1.5
BULK DENSITY	Not available
EVAPORATION RATE	Not applicable
VAPOR PRESSURE (mmHg)	Not applicable
VAPOR DENSITY (air = 1)	Not applicable
VOLATILES	None
VOLATILE ORGANIC COMPOUNDS	Not applicable
AUTOIGNITION	Not available
FLASH POINT	Not applicable

**10. STABILITY AND REACTIVITY**

STABILITY	Stable
HAZARDOUS DECOMPOSITION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.

**11. TOXICOLOGICAL INFORMATION**

ROUTE OF ENTRY	Eye Contact; Skin Contact; Inhalation; Ingestion		
<b>CARCINOGEN</b>	<u>IARC</u>	<u>NTP</u>	<u>OSHA Substance</u>
COMPONENT	<u>(group)</u>		<u>Specific Regulation</u>

There is no evidence that this product poses a carcinogenic risk under normal conditions of handling and use.

**CHRONIC (LONG TERM) EFFECTS OF EXPOSURE**

EFFECTS OF CHRONIC EXPOSURE	This product is considered as being non-toxic. Use of good industrial hygiene practices is recommended.
TARGET ORGANS	Not applicable.

**12. ECOLOGICAL INFORMATION**

POTENTIAL TO BIOACCUMULATE	Unknown.
AQUATIC TOXICITY	None Established

**13. DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL METHODS	Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER WARNINGS	Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

**14. TRANSPORTATION INFORMATION**

This section provided for general information only.  
 FOR NON-BULK SHIPMENTS.  
 FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

**DOT CLASSIFICATION**

PROPER SHIPPING NAME	Not regulated.
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The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

**15. REGULATORY INFORMATION**

USA

TSCA This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.  
 FDA 21CFR172.892.

SARA/TITLE III CAS NUMBER CONCENTRATION  
 (% by weight)  
 Contains no substances at or above the reporting threshold under Section 313.

**16. OTHER INFORMATION**

HMIS® Hazard Ratings

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs by OSHA's 29 CFR 1910.1200, we choose to provide them as a service to our customers using HMIS®. These ratings are to be used only with a fully implemented HMIS® program. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

NPCA recommends that employers must determine appropriate PPE for the actual conditions under which this product is used in their workplace. For information on PPE codes, consult the HMIS® Implementation Manual.

HMIS® is a registered trademark of the National Paint and Coatings Association (NPCA).

<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
1	1	0

MSDS DATE 12-January-2005  
 FOR INFORMATION CONTACT: For product information, contact:  
 National Starch & Chemical Company  
 National Starch Food Innovation  
 Customer Service: 1-800-859-8569  
 Technical Service Support: 1-800-743-6343

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.