
NATRASORB® HFB

Hydrophobic modification allows the starch to absorb anhydrous materials. Oil control additive & shine reduction on skin.

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Section 1

Sales Specifications for NATRASORB® HFB



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NATRASORB® HFB starch

INCI Name: Aluminum Starch Octenylsuccinate (and) Acrylates
Copolymer (and) Magnesium Carbonate

Specification

Appearance White to off-white free flowing powder,
essentially free of foreign material

Parameter	Limits
% Moisture	14.0 maximum
pH	7.5 - 9.7
Screen Analysis	99.5% minimum through 100 mesh screen
Sterilization Dosage	2.0 kGy minimum 6.0 kGy maximum

Measurements

Moisture is measured on a Cenco Moisture Balance.

The pH is measured by preparing a slurry of 20 parts of the product in 10 parts 200 proof (anhydrous) ethanol to which is added 70 parts deionized water. Denatured ethanol should not be used.

The sterilization dose was set to achieve maximum purity with minimum effect on the starch.

Issued: 2006.10

No representation or warranty, expressed or implied, is made as to the accuracy or completeness of the information of data contained herein and Saffire Blue Inc. shall have no obligation or liability whatsoever with respect to any such information or data, including, but not limited to, any liability for infringement of patent or other industrial property rights. Saffire Blue Inc. disclaims all implied warranties of merchantability and fitness for a particular purpose. Saffire Blue Inc. shall in no event be liable for incidental or consequential damages, including, without limitation, lost profit, loss of income, loss of business opportunity and any other related costs and expenses.

Section 2

Technical Sales Bulletin for NATRASORB® HFB



NATRASORB® HFB Starch

INCI: Aluminum Starch Octenylsuccinate (and) Acrylates Copolymer (and) Magnesium Carbonate

Oil Adsorbing Hydrophobic Starch

INTRODUCTION

NATRASORB® HFB starch is a hydrophobically modified starch that has a high capacity for loading oils. The product functions as a free flowing carrier for oil soluble ingredients. When loaded, NATRASORB HFB starch maintains free flowing properties and good aesthetics, even in the presence of moisture. The product can also be used as an additive in formulations to provide oil control, to help mitigate syneresis, and to assist in high loading of oil into final products.

NATRASORB HFB starch, by its carrying capacity, also functions as a delivery vehicle into formulations. Fragrances, for example, can be uniformly incorporated into a powder and can exhibit delayed release. By loading them into the NATRASORB HFB starch, binders or sunscreens can be added into loose or pressed powders, more evenly and easily distributing the liquid within the powder. Likewise, emollients can be added into body or bath powders for novel performance.

NATRASORB HFB starch can be used as supplied in formulations targeted for oil control. When incorporated into such formulation, the NATRASORB HFB starch can function to adsorb oil from the skin, helping control shine and providing a matte finish. Incorporating the NATRASORB HFB starch also results in good aesthetics, in addition to a reduction in shine and a matte effect on the skin. Good wear properties are also expected due to the product's very hydrophobic nature.

APPLICATION AREAS

Carrier /Delivery System, Oil Control Powders, Loose Powders, Pressed Powders, Shine Reduction, Dry Emollient, Anhydrous Products, Makeup, Concealer, Stick/Balm, Antiperspirants, Emulsions



FEATURES / BENEFITS

- Starch Derived
- Sebum Adsorption
- Carrier for Anhydrous Liquid including: fragrances, emollients, UV filters, and esters/silicones
- Free Flowing
- Does Not React With Moisture
- No Change in Aesthetics
- No Clumping or Loss of flow
- No Discoloration
- Good wear properties
- Matte Finish

SUGGESTED USE LEVELS, AS SUPPLIED

Powder formulations:	1% - 50%
Anhydrous color cosmetic products:	1% - 50%
Emulsion systems:	3% - 5%

FORMULATION GUIDELINES

NATRASORB HFB starch is commonly used as an aesthetics modifier in aqueous emulsions as well as in anhydrous ointment formulations. The method of incorporation, which is especially important when adding the starch to an aqueous emulsion, is detailed below:

Aqueous Emulsions

NATRASORB HFB starch is hydrophobic and thus not wetted by water alone. The preferred method of incorporation into an emulsion is to wet out the starch in water soluble humectants or in oils. Post add the slurry to the emulsion below 45°C, on cool down. NATRASORB HFB starch can be added as a powder directly to the emulsion with proper mixing. Again, care must be taken to incorporate the starch at 45°C or below when used in aqueous systems. If temperatures above 50°C are encountered, the starch granule begins to partially solubilize, reducing its effectiveness as an aesthetics control agent and potentially increasing the formulation viscosity.

Anhydrous Ointments

Combine all ingredients, except for NATRASORB HFB starch and heat to melting. Mix until homogeneous. Slowly sift in NATRASORB HFB starch and mix until uniform. Maintain temperature above the melting point of the combined oleaginous materials; the starch will remain in the system as a particulate. Note that the temperature constraint outlined for aqueous emulsions does not apply in anhydrous systems. NATRASORB HFB starch will be unaffected up to 80°C in non-aqueous formulations.

Once added to either an aqueous emulsion or an anhydrous product, NATRASORB HFB starch can be homogenized or milled without affecting its properties.



Because NATRASORB HFB starch is an organic material, it is susceptible to microbiological growth. Suitable preservation is recommended for systems containing NATRASORB HFB starch.

PERFORMANCE PROPERTIES

Adsorption

The loading profiles for several oils are featured in the table below. The materials chosen represent different classes of anhydrous liquids and can be used as guideline for similar oils. The first endpoint represents a change in the NATRASORB HFB starch appearance, but no loss of free flow. At the second endpoint, the oil containing product still flows, but free flowing characteristics are diminished. The third endpoint represents the saturation point, where the NATRASORB HFB starch starts to glisten and lose any flow. As a comparison, the flow properties of DRY-FLO® PC/PURE/PLUS starches (Aluminum Starch Octenylsuccinate) diminish with the addition of about 4% oil.

Oil Soluble Ingredient	Percent Absorption		
	Endpoint 1 Change in Appearance	Endpoint 2 Loss of Free Flow	Endpoint 3 Saturation
Mineral Oil	13%	19%	35%
Isopropyl Myristate	15%	20%	35%
Fragrance	14%	19%	25%

COMPATIBILITY

NATRASORB HFB starch is not specific to the type of oil that it can adsorb and, therefore, has a broad formulating range. Other products that can be loaded onto the starch include oil soluble sunscreens, such as ethylhexyl methoxycinnamate or ethylhexyl salicylate, emollients, such as silicones or esters, and actives, such as DEET.

STORAGE AND HANDLING

NATRASORB HFB starch is a fine organic particulate. When handling, avoid generation of dust. Use in a well ventilated area. Use of a dust mask is recommended. Avoid contact of the NATRASORB HFB starch powder or dust with heat, sparks or open flame. The product is sterilized via irradiation for highest purity. The material can be stored at ambient condition. Once a container is opened, care must be taken not to introduce contamination.

HEALTH AND SAFETY

Information on NATRASORB HFB starch relating to EU Cosmetics Directive 76/768/EEC is also available upon request.

1.2007, REV. 12.04.2008

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operating conditions. The results of toxicity testing of the polymers used in the formulations are found in the respective technical literature, the safety of the formulation has not been established by testing. The suitability of the final formulation should be confirmed in all respects by appropriate evaluation. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without the authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

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Section 3

Regulatory Information for NATRASORB® HFB



NATRASORB® HFB starch

Regulatory Information

Parameter

CAS Number	Mixture
USA (TSCA)	Yes
Europe	EINECS listed monomers and substances
Canada	Yes
Australia	Yes

Issued: 2008.10

No representation or warranty, expressed or implied, is made as to the accuracy or completeness of the information of data contained herein and AkzoNobel Surface Chemistry shall have no obligation or liability whatsoever with respect to any such information or data, including, but not limited to, any liability for infringement of patent or other industrial property rights. AkzoNobel Surface Chemistry disclaims all implied warranties of merchantability and fitness for a particular purpose. AkzoNobel Surface Chemistry shall in no event be liable for incidental or consequential damages, including, without limitation, lost profit, loss of income, loss of business opportunity and any other related costs and expenses.



AkzoNobel
Tomorrow's Answers Today

Monday, August 03, 2009

Re: NATRASORB® HFB Material Origin BSE

To: Whom it may concern,

AkzoNobel Surface Chemistry Personal Care has completed a review of the ingredients used in the manufacture of our personal care products. As a result of this exercise, we are able to certify that the below product is free of any animal derived ingredients.

NATRASORB HFB starch

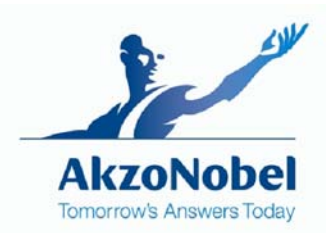
Specifically, this product is derived from inorganic, plant and synthetic sources.

Sincerely,

David Bower
Regulatory, U.S.
908 707-3756

Section 4

MSDS for NATRASORB® HFB

***** MATERIAL SAFETY DATA SHEET *******1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NUMBER	15-05066
PRODUCT NAME	NATRASORB® HFB Oil absorber
Manufacturer	Akzo Nobel Surface Chemistry LLC 525 West Van Buren Street Chicago, IL 60607-3823 USA www.surfactants.akzonobel.com
	EMERGENCY PHONES: MEDICAL: 914-693-6946 (Health & Safety Call Center-24 hours) TRANSPORT: CHEMTREC: 800-424-9300 (24 hours) CHEMTREC International: 703-527-3887 (call collect) CANUTEC: 613-996-6666 (24 hours)
SYNONYMS	MSDS Requests/Customer Service: See phone numbers in Section 16 INCI Name: Aluminum Starch Octenylsuccinate (and) Acrylates Copolymer (and) Magnesium Carbonate

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY	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	Repeated or prolonged skin contact may result in mild irritation.

INHALATION	This product can produce a nuisance dust which should be maintained below a time weighted average of 10 mg/m ³ . Avoid prolonged or repeated breathing of vapor or dust. Use only in well ventilated areas.
INGESTION	Ingestion may cause irritation of the gastrointestinal tract. 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. If symptoms develop, obtain medical attention.
INHALATION	Remove to fresh air. Get medical attention if irritation persists.
INGESTION	Treat symptomatically and supportively. Get medical attention.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Not available
FLASH POINT	Not applicable
EXTINGUISHING MEDIA	Dry Chemical; CO ₂ ; Water Fog; Foam
SPECIAL FIREFIGHTING PROCEDURES	No special procedures are required.
FIRE & EXPLOSION HAZARDS	Product is a finely divided combustible powder and as such constitutes a potential fire hazard. Keep workplace dust levels below the stipulated exposure limits. Prohibit smoking and open flames. Avoid sparks or other sources of static electricity. Minimum ignition temperature of dust cloud- approx. 390 C. Minimum explosive concentration- approx. 80 mg/l. Minimum energy to ignite cloud by electrical spark- approx. 0.10 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.
HANDLING/STORAGE	Store in a cool, dry area away from heat, sparks or fire. Mechanical handling of the powder on inadequately grounded equipment can result in static electrical discharges. All handling equipment must be properly grounded.

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

VENTILATION REQUIREMENTS	General.
EYE PROTECTION REQUIREMENTS	Wear safety glasses with side shields. Protect against dust and particulates.
GLOVE REQUIREMENTS	The use of chemically resistant gloves is recommended.
CLOTHING REQUIREMENTS	Uniforms, coveralls, or a lab coat should be worn.
CHANGE/REMOVAL OF CLOTHING	Remove contaminated clothing and launder before reuse.
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS	None required under normal handling conditions. Use NIOSH approved dust mask if dust levels are irritating.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE	Mixture
PHYSICAL FORM	Powder.
COLOR	White
ODOR	Starch
ODOR THRESHOLD	Not available
MOLECULAR WEIGHT	> 10000
PH AS IS	Not applicable
pH IN (1%) SOLUTION	7.5 - 9
OXIDIZING PROPERTIES	Not applicable
BOILING POINT	Not applicable
MELTING/FREEZING POINT	Not applicable
SOLUBILITY IN WATER	Insoluble
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	< 12 %
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		
CARCINOGEN	<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	Not established.
TARGET ORGANS	Not applicable.

PRODUCT TOXICOLOGY

PRODUCT INFORMATION	Unlikely to cause harmful effects under normal conditions of handling and use.
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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	Empty containers may contain product residue; follow MSDS and label
WARNINGS	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.

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 material is not on the TSCA Inventory. It is excluded under the Food, Drug, and Cosmetic Act.

SARA/TITLE III

CAS NUMBER

CONCENTRATION
(% by weight)

Contains no substances at or above the reporting threshold under Section 313.

CALIFORNIA PROPOSITION 65

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace amounts.

COMPONENT

CAS NUMBER

None reportable.

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).

Health

Flammability

Reactivity

1

1

0

MSDS DATE

15-December-2008

FOR INFORMATION CONTACT:

Akzo Nobel Surface Chemistry LLC

Phone: 1-888-331-6212

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.

Section 5

GMO Statement for NATRASORB® HFB



To Whom it May Concern

27th October 2008

GMO STATUS for the Personal Care Products

Akzo Nobel Surface Chemistry – Personal Care is offering starch-based polymers under an "Identity Preserved Program".

Akzo Nobel Surface Chemistry – Personal Care is supplying non-GM starch products (Personal Care ingredients list is attached) from its European, Brazilian and USA manufacturing plants under an Identity Preserved Program. This is possible because there has been a thorough screening of the raw materials, supply chain and manufacturing processes. Steps taken to assure Identity Preservation include: ensuring that the farmers know the origin of the seed they plant, documenting data on the storage and handling of the grain, and testing composite samples of incoming grain into the production sites. We can demonstrate that the European, Brazilian and USA manufacturing plants can consistently supply non-GM starches from all starch bases.

Polymerase Chain Reaction (PCR) testing is used to verify that the Identity Preserved Program is in compliance with 0.9% maximum limit for GM material detectable in non-GM agriculturally derived products (global acceptance of a 0.9% maximum limit for GM material detectable in non-GM agriculturally derived products).

It should also be noted that confusion has arisen over the use of the terms "Corn Starch-Modified" or "Modified Starch." These terms refer to a chemical or physical modification processes and have no connection to genetic modification.

If you have any questions concerning this statement or this topic in general, please do not hesitate to contact us.

Sincerely,

David Hart

Product regulatory Manager

Tel: 00 44 1753 501393

Fax: 00 44 1753 879006

Email: david.hart@akzonobel.com

LIST OF THE PERSONAL CARE INGREDIENTS BASED ON STARCH

PRODUCT	INCI NAME	COUNTRY OF MANUFACTURE
STRUCTURE® XL	Hydroxypropyl Starch Phosphate	USA
STRUCTURE® SOLANACE	Potato Starch Modified	USA
STRUCTURE® ZEA	Hydroxypropyl Starch Phosphate	USA
DRY FLO® AF / DRY FLO® AF Pure	Corn Starch Modified	USA
DRY FLO® PC / DRY FLO® Plus	Aluminum Starch Octenylsuccinate	USA/Brazil
DRY FLO® ELITE LL	Aluminum Starch Octenylsuccinate (and) Lauroyl Lysine	USA/Brazil
DRY FLO® ELITE BN	Aluminum Starch Octenylsuccinate (and) Boron Nitride	USA/Brazil
TAPIOCA PURE	Tapioca Starch	USA
PURITY® 21C	Zea Mays (Corn) Starch	USA/Germany
INDEX™	Dextrin	USA
NATRASORB® BATH	Tapioca Starch	USA
NATRASORB® HFB	Aluminum Starch Octenylsuccinate (and) Acrylates Polymer (and) Magnesium Carbonate	USA/Brazil

PRODUCT	INCI NAME	COUNTRY OF MANUFACTURE
AMAZE®	Corn Starch Modified	USA
Naviance™ Tapioca	Tapioca Starch	Germany
Naviance™ Tapioca P	Tapioca Starch	Germany
Naviance™ Maize	Zea Mays Starch (EU) Zea Mays (Corn) Starch	Germany
Naviance™ instant Maize	Zea Mays Starch (EU) Zea Mays (Corn) Starch	USA

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