MATERIAL SAFETY DATA SHEET NeuPebax 3533 SA01, 20% BaSO4, 1% TiO2

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1. PRODUCT AND COMPANY IDENTIFICATION

NEU Specialty Engineered Materials, LLC. 15 Corporate Drive, North Haven, CT 06473

, exposure

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight percent
Titanium dioxide	13463-67-7	1 - 5
Barium sulfate	7727-43-7	10 - 30

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This mixture has not been evaluated as a whole. Information provided on the health effects of this product is based on individual components. All ingredients are bound and potential for hazardous exposure as shipped is minimal. However, some vapors may be released upon heating and the end-user (fabricator) must take the necessary precautions (mechanical ventilation, respiratory protection, etc.) to protect employees from exposure.

POTENTIAL HEALTH EFFECTS

Routes of Exposure:	: Inhalation, Ingestion, Skin contact
Acute exposure	
Inhalation Ingestion Eyes Skin	 Particulates, like other inert materials can be mechanically irritating. May be harmful if swallowed. Particulates, like other inert materials can be mechanically irritating. Experience shows no unusual dermatitis hazard from routine handling.
Chronic exposure	: Refer to Section 11 for Toxicological Information.
Medical Conditions Aggravated by Exposure:	: None known.

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Inhalation	: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. When symptoms persist or in all cases or doubt seek medical advice.
Ingestion	: Do not induce vomiting without medical advice. When symptoms persist or in all cases of doubt seek medical advice.
Eyes	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.
Skin	: Wash off with soap and plenty of water. If skin irritation persists seek medical attention.
	5. FIREFIGHTING MEASURES
Flash point	: not applicable
Flammable Limits Upper explosion limit Lower explosion limit Auto-ignition temperature Suitable extinguishing media Special Fire Fighting Procedures	 not applicable not applicable not applicable carbon dioxide blanket, Water spray, Dry powder, Foam. Fullface self-contained breathing apparatus (SCBA) used in positive pressure mode should be worn to prevent inhalation of airborne contaminants.
Unusual Fire/Explosion Hazards	: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), other hazardous materials, and smoke are all possible.
	6. ACCIDENTAL RELEASE MEASURES
Personal precautions	: Wear appropriate personal protection during cleanup, such as impervious gloves, boots and coveralls.
Environmental precautions	: Should not be released into the environment. The product should not be allowed to enter drains, water courses or the soil.
Methods for cleaning up	: Clean up promptly by sweeping or vacuum. Package all material in plastic, cardboard or metal containers for disposal.
	7. HANDLING AND STORAGE
Handling	: Take measures to prevent the build up of electrostatic charge. Heat only in areas with appropriate exhaust ventilation.
Storage	: Keep containers dry and tightly closed to avoid moisture absorption and contamination. Keep in a dry, cool place.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION				
Respiratory protection	: N	No personal respiratory protecti	ve equipment normally r	equired.
Eye/Face Protection	: S	afety glasses with side-shields		
Hand protection	: F	Protective gloves		
Skin and body protection	: L	Long sleeved clothing		
Additional Protective Measures	: S	Safety shoes		
General Hygiene Considerations		Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.		
Engineering measures		Heat only in areas with appropriate exhaust ventilation. Provide appropriate exhaust ventilation at machinery.		
Exposure limit(s)				
	X 7 1			.
Components	Value	Exposure time	Exposure type	List:
Barium sulfate	10 mg/m3	Time Weighted Average		ACGIH

Barium sulfate	10 mg/m3	Time Weighted Average		ACGIH
		(TWA):		
	5 mg/m3	Recommended exposure limit (REL):	Respirable.	NIOSH
	10 mg/m3	Recommended exposure limit (REL):	Total	NIOSH
	5 mg/m3	PEL:	Respirable fraction.	OSHA Z1
	15 mg/m3	PEL:	Total dust.	OSHA Z1
	5 mg/m3	Time Weighted Average (TWA):	Respirable fraction.	OSHA Z1A
	10 mg/m3	Time Weighted Average (TWA):	Total dust.	OSHA Z1A
Titanium dioxide	10 mg/m3	Time Weighted Average (TWA):		ACGIH
	15 mg/m3	PEL:	Total dust.	OSHA Z1
	10 mg/m3	Time Weighted Average (TWA):	Total dust.	OSHA Z1A
	10 mg/m3	Time Weighted Average (TWA):	as Ti	MX OEL
	20 mg/m3	Short Term Exposure Limit (STEL):	as Ti	MX OEL

9. PHYSICAL AND CHEMICAL PROPERTIES

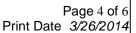
Form Appearance Colour : solid: pellets, Slabs: WHITE

Evapouration rate Specific Gravity Bulk density Not applicableNot determinedNot established

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Odour Melting point/range Boiling Point: Water solubility	very faintNot determinednot applicableinsoluble	Vapour pressure Vapour density pH	 not applicable not applicable not applicable
	10. STABILITY AND	O REACTIVITY	
Stability	: The product is stabl	le if stored and handled as	s prescribed.
Hazardous Polymerization	: Will not occur.		
Conditions to avoid	: To avoid thermal de	ecomposition, do not over	heat.
Incompatible Materials	: Strong acids, oxidi	zing and reducing agent	s
Hazardous decomposition products		D2), carbon monoxide (C0 dous materials, and smoke	· ·

11. TOXICOLOGICAL INFORMATION

This mixture has not been evaluated as a whole for health effects. Exposure effects listed are based on existing health data for the individual components which comprise the mixture.

Toxicity Overview

This product contains the following components which in their pure form have the following characteristics:

CAS-No.	Chemical Name	Effect	Target Organ
13463-67-7	Titanium dioxide	Systemic effects	Respiratory system.
7727-43-7	Barium sulfate	Irritant	Respiratory system.
		Systemic effects	Eyes, Respiratory system.

Carcinogenicity

This product contains the following components which, in their pure form, have the following carcinogenicity data:

CAS-No.	Chemical Name	OSHA	IARC	NTP
13463-67-7	Titanium dioxide	no	2B	no

IARC Carcinogen Classifications:

1 - The component is carcinogenic to humans.

2A - The component is probably carcinogenic to humans.

2B - The component is possibly carcinogenic to humans.

NTP Carcinogen Classifications:

1 - The component is known to be a human carcinogen.

2 - The component is reasonably anticipated to be a human carcinogen.

12. ECOLOGICAL INFORMATION

Persistence and degradability

: Not readily biodegradable.

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NeuPebax 3533 SA01, 20% BaSO4, 1% TiO2 Version Number 1.1 Page 5 of 6 Print Date 3/26/2014 Revision Date 03/13/2014 Environmental Toxicity Chemicals are not readily available as they are bound within the : polymer matrix. **Bioaccumulation Potential** : Chemicals are not readily available as they are bound within the polymer matrix. Additional advice : not applicable 13. DISPOSAL CONSIDERATIONS Product Like most thermoplastic plastics the product can be recycled. Where : possible recycling is preferred to disposal or incineration. The generator of waste material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations. Contaminated packaging Recycling is preferred when possible. The generator of waste · material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations. **14. TRANSPORT INFORMATION** U.S. DOT Classification Not regulated for transportation. : ICAO/IATA Refer to specific regulation. ÷ IMO/IMDG (maritime) Refer to specific regulation. : **15. REGULATORY INFORMATION US Regulations: OSHA Status** Classified as hazardous based on components. **TSCA Status** All components of this product are listed on or exempt from the : TSCA Inventory. US. EPA CERCLA Hazardous Substances (40 CFR 302) not applicable California Proposition : Not applicable 65 SARA Title III Section 302 Extremely Hazardous Substance

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Print Date 3/26/2014 Unless specific chemicals are identified under this section, this product is Not Applicable under this regulation SARA Title III Section 313 Toxic Chemicals: Unless specific chemicals are identified under this section, this product is Not Applicable under this regulation Canadian Regulations: National Pollutant Release Inventory (NPRI) not applicable

WHMIS Classification : D2A DSL All components of this product are on the Canadian Domestic : Substances List (DSL) or are exempt.

National Inventories:

Australia AICS	:	Listed
China IECS	:	Listed
Europe EINECS	:	Listed
Japan ENCS	:	Not determined
Korea KECI	:	Listed
Philippines PICCS	:	Not determined

16. OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.