

MATERIAL SAFETY DATA SHEET

Revision Date: 01/08/2021

SECTION 1 – PRODUCT IDENTIFICATION

Product Name:	EVA Encapsulant Sheet
Manufacturer:	Navitas Alpha Renewables Pvt. Ltd.
Address:	Plot No. B-20/1, Block No. 242/243, Road No. 14, Hojiwala Industrial Estate Sachin Udhyognagar, Sahkari Mandli, Sachin, Ta.Choryasi
City:	Surat
State:	Gujarat
Zip:	394230
Country:	India
MSDS Prepared By:	Quality Assurance Manager
Emergency:	+91-75002 97075
Created Date:	27/01/2021
Revised Date:	01/08/2021 (Note: Revised date always supersedes creation date)

SECTION 2 – HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS REGISTRY NO.	EC No.	AMOUNT (WEIGHT %)
Compounded thermoplastic copolymer with additives	Trade secret	All monomers and additives are EINECS listed	100 %
Polymer of ethylene and vinyl acetate	24937-78-8	Monomers are EINECS listed	> 80 %
Organic peroxide	Trade secret	All additives are EINECS listed	0.0 – 5.0 %

SECTION 3 – HAZARD IDENTIFICATION

Emergency Overview:	Not hazardous
Relevant Routes of Exposure:	Inhalation, ingestion or skin contact
<u>Potential Health Effects:</u>	
Eyes:	Mechanical irritation is possible
Skin:	Molten polymer may cause thermal burns
Inhalation:	Vapors released during thermal processing may cause respiratory irritation
<u>Carcinogenicity:</u>	Not listed in NTP, OSHA, or IARC Monographs

SECTION 4 – FIRST AID MEASURES

Eyes:	If heated material gets into eyes, flush immediately with fresh water for 15 minutes while holding eyelids open. Remove contact lenses if worn. Seek immediate medical attention.
Skin:	If hot material gets onto skin, quickly cool in water. See medical attention for extensive burns. Do not try to peel solidified material from skin or use solvents or thinners to dissolve it.

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Ingestion:	Ingestion is an unlikely route of exposure under normal industrial conditions. However, if appreciable quantities of this product are accidentally swallowed, seek medical attention
Inhalation:	If breathing difficulties develop, move affected person away from source of exposure into fresh air. Seek medical attention.

SECTION 5 – FIRE FIGHTING PROCEDURES

Flammable Limits in Air (% by volume):	Lower: Not applicable Upper: Not applicable
Flash Point:	Not Available. Flash point is anticipated to be greater than 200°C
Auto-ignition Temperature:	Not Available
Extinguishing Media:	Small Fire: Water Spray, Carbon Dioxide, Foam, Dry Chemical Large Fires: Water Spray
Fire Fighting Instructions:	Wear an approved positive pressure self-contained breathing apparatus and firefighter turnout gear.
Flammability Classification:	Not Classified. Polymer will burn but does not easily ignite
Hazardous Combustion Products:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: carbon dioxide, carbon monoxide.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Accidental Release Measures:	Sweep spilled material into a disposable container. If spilled material is molten, allow it to cool and solidify before proceeding with disposal methods
Personal Precautions:	Use appropriate skin and eye protection
Environmental Precautions:	Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water
Methods for Cleanup:	No special methods required
Prohibited Products:	None known
Spill:	Spilled material may create a slipping hazard

SECTION 7 – HANDLING AND STORAGE

Handling:	Keep away from heat and sources of ignition. Use with adequate ventilation. Spilled material can make walking hazardous, potentially causing falls and serious injury. After handling, always wash hands thoroughly with soap and water.
Storage:	Keep container dry. Store away from excessive heat and away from strong oxidizing agents. Keep container closed to prevent contamination.
Other Precautions:	In order to maintain the product shelf life, the storage temperature should be less than 35°C

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SECTION 8 – EXPOSURE CONTROLS & PERSONAL PROTECTION	
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Engineering Controls:	Ventilation – provide general and/or local exhaust ventilation to control organic vapors released by the product during thermal processing.
Exposure Limits:	Although some of the additives used in this product may have exposure guidelines, these additives are encapsulated in the product and no exposure would be expected under normal handling conditions.
<u>Personal Protective Equipment:</u>	
Eye/Face Protection:	Use safety glasses (with side shields). Use chemical goggles or a full-face respirator in case of any further eye discomfort.
Skin Protection:	No precautions other than clean body-covering clothing should be needed.
Hand Protection:	Chemical protective gloves should not be needed when handling this material. Use gloves to protect from mechanical injury. Selection of gloves will depend on the task. Use gloves with insulation for thermal protection, when needed. <i>(Note that it is good manufacturing practice to use gloves when handling EVA encapsulants to prevent contamination of the product by skin oils, which could cause optical blemishes on the manufactured photovoltaic modules or panels.)</i>
Respiratory Protection:	When facing airborne particulates/dust concentrations above the exposure limit, use approved certified respirators. Consult with your company’s local procedures for selection, training, inspection, and maintenance of respirators.
Ingestion:	Use good personal hygiene. Wash hands before smoking or eating.
General Hygienic Considerations:	Wash hands before breaks and immediately after handling the product. Do not consume or store food in the work area.

SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES	
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Appearance:	Solid Translucent to White
Odor:	Faint, Characteristic
Odor Threshold:	Not Available
pH:	Not Applicable
Boiling Point/Boiling Range:	Not Applicable
Melting Point:	55 – 110°C (130 – 230°F)
Flash Point:	Not Available
Flammability:	Not Classified. Polymer will burn but does not easily ignite
Solubility in Water:	Insoluble
Specific Gravity or Density (Water = 1)	0.92 – 0.98

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SECTION 10 – STABILITY AND REACTIVITY	
Chemical Stability:	Product is stable. The product does contain chemical additives that are intended to react at temperatures above 100°C.
Conditions to Avoid:	Exposure to temperatures higher than 200°C (400°F) for extended period can cause product to decompose and release hazardous fumes (such as carbon monoxide).
Materials to Avoid:	Material can be softened by some hydrocarbons. Avoid contact with strong oxidation agents.
Hazardous Decomposition Products:	Not expected to decompose under normal conditions.
Hazardous Polymerization:	Will not occur.
Thermal Decomposition:	Decomposition products can include, and are not limited to: Alcohols, Aldehydes, Ketones, and Organic Acids. Decomposition products can include trace amounts of Hydrocarbons.

SECTION 11 – TOXICOLOGICAL INFORMATION	
Acute Toxicity:	<p>Very low toxicity if swallowed. May cause choking if swallowed. Single dose oral LD50 has not been determined. Typical for this family of materials. Estimated LD50, Rat > 5,000 mg/kg.</p> <p>Not likely to be an aspiration hazard.</p> <p>No adverse effects anticipated by skin absorption. The dermal LD50 has not been determined. Typical for this family of materials. Estimated LD50, Rat > 5,000 mg/kg.</p> <p>No adverse effects are anticipated from single exposure to dust. Vapors released during thermal processing may cause respiratory irritation. The LC50 has not been determined.</p> <p>Mechanical injury only. Under normal processing conditions, material is heated to elevated temperatures; contact with the material may cause thermal burns.</p> <p>No relevant information found.</p> <p>No relevant information found.</p> <p>Additives are encapsulated in the product and are not expected to be released under normal processing conditions.</p> <p>No relevant information found.</p> <p>No relevant information found.</p> <p>No relevant information found.</p> <p>No relevant information found.</p>
Ingestion:	
Aspiration Hazard:	
Dermal:	
Inhalation:	
Skin Corrosion/Irritation:	
Sensitization:	
Skin:	
Respiratory:	
Repeated Dose Toxicity:	
Chronic Toxicity:	
Developmental Toxicity:	
Reproductive Toxicity:	
Genetic Toxicity:	

SECTION 12 – ECOLOGICAL INFORMATION	
Ecological Information:	No information available

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SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal Considerations:	Incineration or landfill in compliance with central, state, and local regulations
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SECTION 14 – TRANSPORT INFORMATION

U.S. DOT:	Not regulated
Proper Shipping Name:	Plastic sheeting
Hazard Class:	None
UN Number:	Not applicable

Additional Information:

This information is not intended to convey all specific regulatory or operational requirements/information related to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15 – REGULATORY INFORMATION

Notification Status: All components of this product are on the following national chemical inventories, or are exempted from listing:

Country:	Inventory / Notification:
Australia	AICS
Canada	DSL
China (PRC)	IECSC
European Union	EINECS
Japan	ENCS/ISHL
Korea	KECL
Philippines	PICCS
United States of America	TSCA
New Zealand	NZIoC

Additional Information:

USA – TSCA:

All components of this product are listed on the TSCA Inventory of Chemical Substances or qualify for the TSCA Polymer Exemption.

USA – SARA (Superfund Amendments and Reauthorization Act):

Fire Hazard: No

Immediate Hazard: No

Delayed Health Hazard: No

Sudden Release of Pressure Hazard: No

European Union – REACH, European Directive 2006/1907/EC:

All components of this product are confirmed to be pre-registered, or registered, with the European Union per the REACH Regulation (EU 2006/1907/EC).

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European Union – REACH, Article 33, Communication of information on substances in articles:

This product does not contain any substances that are listed in Annex XIV of REACH “Substances of Very High Concern” or SVHC’s (as defined by REACH Regulation) at concentrations which are above the required disclosure limits, as of the Revision date of this MSDS.

European Union – 2002/95/EC (RoHS), 2003/11/EC and 2002/96/EC (WEEE), and amendments:

None of the components of this product contain substances that are listed in these directives.

Japan – Poisonous and Deleterious Substances Control Act

No substances or components in this product are controlled or listed by this legislation, as of the Revision date of this MSDS.

Singapore – Environmental Protection and Management Act (EPMA), List of Controlled Hazardous Substances:

No substances or components in this product are controlled or listed by this legislation, as of the Revision date of this MSDS.

SECTION 16 – OTHER INFORMATION	
Other Information:	Not Applicable

NOTICE: The above information is accurate to the best of our knowledge; however, since the data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, neither NAVITAS ALPHA RENEWABLES PVT. LTD., nor any of its affiliates, MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use. This information is for use by technically skilled persons at their own discretion and risk and does not relate to the use of any product in combination with any other substance or in any process. The above information gives typical properties only and is not to be used for specification purposes.