



NATIONAL TRANSPORTATION SAFETY BOARD
Investigative Hearing

Norfolk Southern Railway general merchandise freight train 32N
derailment with subsequent hazardous material release and fires,
in East Palestine, Ohio, on February 3, 2023

GROUP	D
EXHIBIT	
25	

Agency / Organization

Braskem

Title

Polyethylene Safety Data Sheet



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: US - OSHA Hazard Communication Standard (29 CFR 1910.1200)

Issuing Date 15-March-2017

Revision Date 24-February-2023

Version Number 2.2

1. Identification

Trade Name Ultra High Molecular Weight Polyethylene

Product Code IDEALIS500, IDEALIS500WS, IDEALIS509, IDEALISMG, UTEC3040, UTEC3040WS, UTEC3041, UTEC3049, UTEC4040, UTEC4041, UTEC5040, UTEC5041, UTEC5540, UTEC5541, UTEC5542F, UTEC6540, UTEC6540G, UTEC6540WS, UTEC6541, UTEC6549, UTEC7542F, UTECJA50, UTECMG, UTECOV, VARIDEALIS, VARUTEC

Other means of identification

Recommended use of the chemical and restrictions on use

Recommended use Polymer preparations and compounds

Restrictions on use No Information Available

Details of the supplier of the safety data sheet

Supplier Address

Braskem America, Inc.
1735 Market Street
Philadelphia, PA 19103-7583
TEL: (800) 396 - 5251

Emergency telephone number

Emergency Telephone CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust	Yes
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Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Warning

Hazard statements

May form combustible dust concentrations in air

Other information

Special danger of slipping by leaking/spilling product. Electrostatic charges may be generated during handling. If small particles are generated during processing or handling, this product may form combustible dust concentrations in air.

3. Composition/information on ingredients**Substance**

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Trade secret
Polyethylene	9002-88-4	98-100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures**Description of first aid measures**

Inhalation	Move victim to fresh air. Medical aid is necessary if symptoms appear to be an obvious consequence of inhalation.
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention if irritation develops and persists.
Skin contact	After contact with product or dust: Wash skin with soap and water. Get medical attention if irritation develops and persists. After contact with molten product, cool skin area rapidly with cold water. Removal of solidified molten material from skin requires medical assistance.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms Product dust may be irritating to eyes, skin and respiratory system.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media CO₂, dry chemical, dry sand, alcohol-resistant foam. Water spray or fog.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical Avoid generation of dust. Fine dust dispersed in air may ignite. Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Avoid generation of dust. Avoid contact with eyes. Use personal protective equipment as required. Do not breathe dust. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharges.

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Prevent dust cloud.

Methods for cleaning up Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal. Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid generation of dust. Do not breathe dust. Avoid contact with eyes. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654).

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a cool, dry area away from potential sources of heat, open flames, sunlight or other chemicals. Keep container closed when not in use. Keep in an area equipped with sprinklers.

Incompatible materials Fluorine, strong acids, strong oxidizing agents, chlorinated solvents, and aromatic compounds.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Polyethylene	Not applicable	Not applicable	Not applicable

Appropriate engineering controls

Engineering controls

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). During hot processing: Tight sealing safety goggles. If there is a risk of contact: Face protection shield.

Hand protection

Wear suitable gloves. Heat resistant gloves are recommended when handling molten materials.

Skin and body protection

Wear suitable protective clothing. During hot processing: Long sleeved clothing, Protective shoes or boots.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Regular cleaning of equipment, work area and clothing is recommended.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Translucent. Powder
Physical state	Solid
Color	White to off-white
Odor	Slight odor
Odor threshold	No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	130 - 140 °C / 266 - 284 °F	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	negligible	None known
Vapor density	No data available	None known
Relative density	0.92-0.935 g/cm ³ (15°C)	None known
Water solubility	Insoluble	None known
Solubility(ies)	Organic solvent: Soluble	None known
Partition coefficient	No data available	None known
Autoignition temperature	362 °C	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosion limits	LEL: The minimum explosive concentration (MEC) for polymer dust varies according to particle size distribution. UEL: Not applicable	
<u>Other information</u>		
Explosive properties	No information available.	
Oxidizing properties	No information available.	
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	
Liquid Density	No information available	
Bulk density	No information available	

10. Stability and reactivity

Reactivity	None under normal use conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Overheating. Sparks. Open flame. Incompatible materials. Dust formation.
Incompatible materials	Fluorine, strong acids, strong oxidizers, chlorinated solvents and aromatic compounds.
Hazardous decomposition products	Decomposition products depend on temperature, exposure to air, and the presence of other substances. Processing may release irritating fumes, olefinic and paraffinic compounds, carbon monoxide, and carbon dioxide. Potential thermal decomposition products include trace aldehydes (including formaldehyde), alcohols, organic acids, and hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Product Information	.
Inhalation	May cause irritation of respiratory tract.

Eye contact	Dust contact with the eyes can lead to mechanical irritation.
Skin contact	Contact with dust can cause mechanical irritation or drying of the skin.
Ingestion	May cause irritation of the mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

Based on available data, the classification criteria are not met

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Polyethylene 9002-88-4	-	Group 3	-	-

IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
STOT - single exposure	None of the ingredients are known to cause specific target organ effects from a single exposure.
STOT - repeated exposure	None of the ingredients are known to cause specific target organ effects through prolonged or repeated exposure.
Target organ effects	Respiratory system, Eyes, Skin.
Aspiration hazard	None of the ingredients are known to be an aspiration hazard.
Other adverse effects	No information available.
Interactive effects	No information available.

12. Ecological information

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.

Bioaccumulation There is no data for this product.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Do not release into the environment. Recover or recycle if possible.

Additional Information Do not reuse empty containers. Do not dispose of waste into sewer. Do not dispose of with household waste. Do not allow to enter drains.

14. Transport information

DOT Not regulated

TDG Not regulated

MEX Not regulated

IATA Not regulated

IMDG Not regulated

15. Regulatory information

TSCA

All components of this product are listed as active on the TSCA Inventory or exempt

International Inventories

Contact supplier for inventory compliance status.

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains no known chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive

Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

WHMIS

Uncontrolled product according to WHMIS classification criteria

U.S. State Right-to-Know Regulations

US State Regulations

Contact Supplier.

California Proposition 65

WARNING: This product can expose you to n-hexane which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

16. Other information

<u>NFPA</u>	Health hazards	1	Flammability	1	Instability	0	Physical and Chemical Properties –
<u>HMIS</u>	Health hazards	1	Flammability	1	Physical Hazards	0	Personal Protection
							X

Chronic Hazard Star Legend * = Chronic Health Hazard

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 RTECS (Registry of Toxic Effects of Chemical Substances)
 World Health Organization

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Revision Note Section 15

Disclaimer

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.

End of Safety Data Sheet

US OSHA LABEL per 29 CFR § 1910.1200(f)

Ultra High Molecular Weight Polyethylene

Warning

BEFORE USING, READ THE SAFETY DATA SHEET. Slipping hazard. May form combustible dust concentrations in air if small particles are generated during further processing, handling, machining, or by other means.

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EMERGENCY PHONE NUMBER
CHEMTREC: 800-424-9300

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