SAFETY DATA SHEET (SDS)

Version No.2 Issued Date: November 7, 2022

Safety Data Sheet – Expanded Polystyrene (EPS) in NUDURA® Insulated Concrete Forms

SECTION 1 – IDENTIFICATION

Product Identifier:	Nudura® Insulated Concrete Forms Nudura® DURAMAX™ Nudura® One Series Nudura® Plus+ Series Nudura® Optimizer
Recommended Use:	Insulated Concrete Forms Foam Plastic Insulation
Supplier of SDS	Tremco Canada Division, RPM Canada 27 Hooper Road, Unit 10 Barrie, Ontario Canada L4N 9S3 1 (866) 468-6299
Emergency Contact:	Nudura® Head Office 1 (866) 468-6299

SECTION 2 – HAZARDOUS IDENTIFICATION

GHS Hazard Classification:	None
Label Elements:	None
Signal Word:	None
Hazard Statement(s)	None
Precautionary Statement(s)	P210 Keep away from heat/sparks/open flames/hot surfaces No Smoking
Other Hazard(s)	Combustible dust particles may concentrate during handing/production processes Low toxicity under normal handling/production processes

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

- *Note: n-pentane and isopentane are residual blowing agents necessary for the manufacturing process. Typically, residual pentanes dissipate rapidly prior to shipment of product.*
- *Some of the content listed on this SDS Sheet is proprietary by nature. Legitimate requests for disclosure of trade secret information to medical personnel will be provided to satisfy provisions in 29 CFR 1910.1200 of Occupational Safety and Health Standards.*

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Component	Ingredient Name(s)	CAS #	% by Weight
Polymer	Polystyrene	9003-53-6	39.149%
Blowing Agent	Normal Pentanes	109-66-0	0.937%
	Isopentanes	78-78-4	0.937%
	Cyclopentane	287-92-3	0.937%
Polypropylene Repro	Polypropylene Copolymer	9010-79-1	28.510%
	Polypropylene Isotactique	9003-07-0	16.536%
	Mixed Thermoplastic Olefin	25085534	5.702%
	Polyethylene	9002-88-4	5.702%
	Carbon Black	1333-86-4	0.57%
Flame Retardant	Trade Secret	Proprietary	0.426%
Low Carbon Steel	Iron	7439-89-6	0.372%
	Manganese	7439-96-5	0.002%
	Silicon	7440-21-3	0.001%
Surface Additives	Trade Secret	Proprietary	0.002%

SECTION 4 – FIRST AID MEASURES

Skin Contact:	This product is not considered a skin irritant and situations where skin is affected, wash area with soap and water. Seek medical attention if condition persists.
Eye Contact:	Flush with water thoroughly if any part of this material comes in contact or lodged in eye(s). Seek medical attention if condition persists.
Inhalation:	Inhalation of pentane vapors may cause respiratory irritation, headache, dizziness, or lack of coordination. Remove to fresh air. If breathing stops, apply CPR (Cardiopulmonary Resuscitation) and first aid training protocols. If symptoms persist, seek medical attention.
Ingestion:	If swallowed and conscious, rinse mouth out with water. DO NOT Induce vomiting. Do not give anything to a person who is not conscious. Seek medical attention immediately.

Symptom/Injuries after skin contact:
Contact with Skin or eyes with hot material may cause serious thermal burns to skin or eyes.

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Symptoms/Injuries after eye Contact:
Dust from this product may cause minor eye irritation.
Contact with skin or eyes with hot material may cause serious thermal burns to skin or eyes.

Symptoms/Injuries after inhalation:
Nuisance dusts can be irritating to the upper respiratory tract. Irritating vapors may form when the polymer is processed at high temperatures.

Symptoms/Injuries after ingestion:
No effects are expected from ingestion of small amounts. May be a choking hazard.

Indication of immediate medical attention and special treatment needed:
Unlikely to be required but, if necessary, treat symptomatically with First Aid protocols

SECTION 5 – FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Suitable Extinguishing Media:	For small fire: Dry chemical, carbon dioxide, water For large fire: Foam, Water Spray
Unsuitable Extinguishing Media:	Do **NOT** use a solid stream of water as it may scatter or spread fire.

SPECIAL HAZARDS

Fire Hazard:
May be combustible at high temperature. May form combustible dust concentrations air.
Vapors generated from overheating/melting/decomposition may be flammable and may cause fire/explosion if source of ignition is present.

Explosion Hazard:
Potential dust explosion hazard. When dust becomes airborne and is exposed to an ignition source, sufficient combustible/flammable dust may exist to burn in open in the open or explode if confined.

Hazardous Decomposition Products in Case of Fire:
Carbon oxides (CO, CO2), Aldehydes, Ketones, Hydrocarbons. Fire will produce dense black smoke/soot.

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Advice for Fire Fighters:
Fight fire from a safe distance and protected location. Avoid raising powdered materials into airborne dust, creating an explosion hazard. Apply aqueous extinguishing media carefully to prevent frothing/steam explosion. Prevent firefighting water from entering the environment.

Protection during Firefighting
Do **NOT** attempt to act without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Other information:
May re-ignite itself after fire is extinguished.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Sources of ignition should be kept well clear of release. Maintain adequate ventilation in areas with increased risk of static discharge or products susceptible to combustion.

Environmental Precautions:
Employ preventative measures to avoid additional leakage/spillage if safe to do so. Prevent spills or contaminates from entering natural watercourse and/or sewer system.

Methods and Materials for Containment and Cleaning Up:

Land Spill:
Sources of ignition should be kept well clear of released material. Avoid generation of dust clouds and use appropriate containment system(s) to avoid run off. Use acceptable storage devices for recycling or disposal as a non-hazardous waste in an approved facility.

Water Spill:
Use approved containment system(s) to avoid released material from entering sewers and/or waterways. This material may float and disperse with water currents and/or wind.

Air Release:
This material, given time and appropriate environmental conditions will settle on the ground. Once settlement occurs, material can be remediated with manual tools or vacuum equipment. Sources of ignition should be kept clear of released materials in confined spaces or with highly concentrated dust clouds.

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SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling:
Ensure good ventilation of the workstation. Wear personal protective equipment. Do not overheat the product. Avoid contact with heated product to prevent burns.
When handling in bulk quantities, this product and its associated packaging may present a crushing hazard due to the large masses involved, possible resulting in severe injury or death.
Combustible dust precautions: Handling this product may result in electrostatic accumulation. Use proper grounding procedures. Use only non-sparking tools. Avoid raising powdered material due to explosion hazard. Prevent the build-up of electrostatic charge.
The plastic packaging film used to secure bags of material on pallets can also develop static electricity – remove packaging film in an area free from ignitable vapors/dust.
Dust accumulations should be controlled through a comprehensive dust control program that includes, but it not limited to, source capture, inspection and repair of leaking equipment, routine housekeeping and employee training in hazards.

Hygiene Measures:
Do not eat, drink, or smoke when using this product. Keep away from food and drink.
Always wash hands after handling this product.

Conditions for Safe Storage, including any Incompatibilities:

Technical Measures:
Ground/bond container and receiving equipment. Electrostatic charges may be generated when emptying sacks. It is recommended that sacks are emptied away from explosive atmospheres.

Storage Conditions:
Store at room temperature. Protect from heat and direct sunlight
Store in dry, cool, well-ventilated area.

Incompatible Materials: Strong oxidizing agents

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SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Country	Chemical (CAS)	Occupational Exposure Limits (Time Weighted Average for 8 hrs.)		Reference
		ppm	mg/m^3	
European Union	Pentane (normal 109-66-0 and iso- 78-78-4)	1000	3000	Community Directive 2006/15/EC
USA	Pentane (all isomers)	1000 600	2950 1770	NIOSH (PEL) American Council of Government Industrial Hygienists (ACGIH)
Austria	Pentane (normal 109-66-0 and iso- 78-78-4)	600	1800	Grenzwert für Arbeitsstoffe und über krebserzeugende Arbeitssoffe
Belgium	Pentane (all isomers)	600	1800	Annex I of the Arrêté royal du 11 mars 2002 relatif à la protection de la santé et de la sécurité des travailleurs contre les risques liés à des agents chimiques sur le lieu de travail
Canada				
Alberta	Pentane (all isomers)	600	1770	Occupational Health & Safety Code 2009
British Colombia	Pentane (all isomers)	600		OHS Regulations, Guidelines Part 5
Quebec	n-Pentane (109-66-0)	120	350	Regulation Respecting

Additional Occupational Exposure Limits continued the next page.

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Occupational Exposure Limits continued:

Saskatchewan All Other Provinces and Territories	cyclopentane (287-92-3) Pentane (all isomers) Pentane (all isomers)	600 600 600	1720 1770	Occupational Health and Safety, Schedule 1 Part 1 The Occupational Health and Safety Regulations 1996, Table 1 ACGIH
Denmark	Pentane (normal 109-66-0 and iso- 78-78-4) Cyclopentane (287-92-3)	500 300	1500 850	Grænseværdier for stoffer og materialer
Germany	Pentan (normal 109-66-0 and iso- 78-78-4)	1000	3000	Technische Regeln für Gefahrstoffe 900 (2006)
Finland	Pentane (normal 109-66-0 and iso- 78-78-4)	500	1500	Finnish Ministry of Social Affairs & Health
France	Pentane (normal 109-66-0 and iso- 78-78-4) Cyclopentane (287-92-3)	1000 600	3000 1720	Institut National de Recherche et de Sécurité (INRS) ED 984
Mexico	Pentane (109-66-0)	600	1800	NOM-010-STPS-1999
Netherlands	Pentaan (normal 109-66-0 and iso- 78-78-4)	600	1800	OEL Database
Norway	Pentane (normal 109-66-0 and iso- 78-78-4)	250	750	Administrative standards for contaminants in workplace air
Poland	Pentane (normal 109-66-0 and iso- 78-78-4)		3000	The Ordinance of the Minister of Labour and Social Policy on the Maximum Admissible Concentrations and Intensities of Harmful Health Agents in Working Environment
Spain	Pentano (normal 109-66-0 and iso- 78-78-4) Ciclopentano (287-92-3)	1000 600	3000 1745	Limites de Exposición Professional Para Agentes Guimicos en España (2008)
Sweden	Pentane (normal 109-66-0 and iso- 78-78-4)	600	1800	Occupational Exposure Limits Values and Measures Against Air Contaminants (AFS 2005:17)
United Kingdom	Pentane (normal 109-66-0 and iso-78-78-4)	600	1800	Health and Safety Executive (HSE) Guidance Note EH40/2005

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Occupational Exposure Limits continued:

Chemical	Organization	Protocol
n-Pentane (Hydrocarbons, BP 36-126°C	NIOSH	1500
n-Pentane (Volatile Organic Compounds)	NIOSH	2549
n-Pentane	NIOSH	95-117
Pentane	OSHA	7

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL – Workers

n-Pentane

Effect Level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	3000 mg/m^3	
	Long-term systemic effects dermal	432 mg/kg bw/day	

DNEL – General Population

n-Pentane

Effect Level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	643 mg/m^3	
	Long-term systemic effects dermal	214 mg/kg bw/day	
	Long-term systemic effects oral	214 mg/kg bw/day	

PNEC

n-Pentane

Compartments	Value	Remark
Fresh Water	230 µg/L	
Marine Water	230 µg/L	
Agua (intermittent releases)	880 µg/L	
STP	3600 µg/L	
Fresh Water Sediment	1.2 mg/kg sediment dw	
Marine Water Sediment	1.2 mg/kg sediment dw	
Soil	0.55 mg/kg soil dw	

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Exposure Controls:
Provide readily accessible eye wash stations and safety showers. Ensure adequate ventilation. If handling results in dust generation or high temperatures, local exhaust ventilation should be provided to ensure that exposure to dust or decomposition products does not exceed the exposure recommended levels.

Personal Protection:
Eye/Face Protection: Safety glasses.
Hand Protection: Use insulated gloves when handling this hot material
Body Protection: Wear suitable protective clothing. Safety foot wear.
Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9 – PHYSICAL AND CHMEICAL PROPERTIES

General Information:

Form:	Insulated Concrete Form System Foam Plastic Insulation
Color:	Powder Blue
Odor:	Perceptible odor
pH value:	Not soluble

Change in Condition:

Melting Point / Melting Range:	>132℃ (270℉)
Boiling Point / Boiling Range:	Undetermined
Flash Point:	Vapors are flammable -49℃ (−56℉) (Pentane)
Evaporation Rate:	not available

Flammability:
In use form flammable / explosive vapor-air mixture

Upper Explosive Limit:	7.8% v/v (Pentane)
Lower Explosive Limit:	1.3% v/v (Pentane)
Vapor Pressure:	Not available
Relative Density:	620g/cm3
Solubility (Water)	Insoluble
Solubility (Other)	Soluble in aromatic hydrocarbons, halogenated solvents / ketones
Partition Coefficient (n-octanol/water):	Not available
Auto-ignition Temperatures:	285℃ (545℉) (Pentane) (ASTM E-659)
Decomposition Temperatures	>280℃ (536℉)
Explosive Properties:	In use, may form flammable/explosive vapor-air mixture

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SECTION 10 – STABILITY AND REACTIVITY

Reactivity:	Flowing product can create electrical charge, resulting sparks may ignite dust or cause an explosion in some concentration ranges.
Chemical Stability:	Stable
Incompatible materials:	Strong oxidizing agents
Hazardous Polymerization:	Will not occur
Thermal Decomposition:	Hazardous decomposition products formed under fire conditions, carbon monoxide, carbon dioxide, toxic fumes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Inhalation:	Low acute toxicity
Ingestion:	Low oral toxicity. LD50 > 2000 mg/kg
Skin Contact:	Low acute toxicity> LD50 > 2000 mg/kg
Eye Contact:	Low acute toxicity
Irritation:	Dust may have irritant effect on skin, eyes and air passages. During thermal processing: May cause irritation to skin, eyes and respiratory system.
Corrosivity:	Not Classified
Sensitization:	It is not a skin sensitizer
Repeated dose toxicity:	Dusts

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity:	This product is not considered harmful to aquatic organisms nor to cause long term adverse effects in the environment.
Persistence and Degradability:	Not readily biodegradable. This material is persistent in the environment
Bio-accumulative potential:	This product is not expected to bio-accumulate through food chains in the environment.
Mobility in Soil:	Low mobility

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SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Remove all packaging for recovery or disposal. Recover or recycle if possible. Deliver to an authorized landfill site, or incinerate under approved controlled conditions.

Additional Information: Disposal should be in accordance with Local, State or National Legislation

SECTION 14 – TRANSPORT INFORMATION

DOT Transport		Not Regulated
ADR = International Carriage of Dangerous Goods by Road		Not Regulated
Sea Transport	IMDG	Not Regulated
Air Transport	IATA/ICAO	Not Regulated

SECTION 15 – REGULATORY INFORMATION

OHSA Hazard Communication Standard (HCS 2012)
Title 29 Code of Federal Regulations (CFR) 1910.1200

Global Harmonized System of Classification and Labelling of Chemicals (GHS)

Canada
WHMIS-2015 This SDS is compliant with WHMIS 2015 (HPR/new HPA).

All ingredients and components for this product are on the Domestic Substances List (DSL).

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SECTION 16 OTHER INFORMATION

SDS prepared by:	**Tremco Canada Division, RPM Canada** 27 Hooper Road Unit 10 Barrie, Ontario Canada L4N 9S3 1 (866) 468-6299
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Updated:	November 7, 2022
Version:	2

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