

SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

1. Identification		
Product identifier:	NOVAPOL® Polyethylene	
Other means of identificati Common name(s), synonym(s): SDS number:	n HDPE, HPLDPE, LDPE, LLDPE, LMDPE, MDPE Polyethylene resins, ethylene polymers NOVA-0029C	
Recommended use and restriction on use Recommended use: Thermoplastic resin extruded into film, sheet or molded into containers and other shapes. Restrictions on use: All uses other than the identified.		
Manufacturer/Importer/Su	oplier/Distributor Information	
Emergency telephone nun	Company Name:NOVA Chemicals, Inc.Address:1555 Coraopolis Heights RoadMoon Township, PA, USA 15108Telephone:Product Information: 1-412-490-4063SDS Information Email:msdsemail@novachem.com	
1-800-561-6682, 1-403-31 1-800-424-9300 (CHEMTI	4-8767 (NOVA Chemicals) (24 hours) REC-USA) (24 hours)	
2. Hazard(s) identification		
Hazard Classification		
OSHA hazard(s) Combustible dust		
Label Elements		
Hazard Symbol:	No symbol	
Signal Word:	Warning	
Hazard Statement:	If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.	
Precautionary Statements:		
Prevention:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. [In case of inadequate ventilation] wear respiratory protection.	

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get

NOVA Chemicals®	Revision Date: 05/17/2023
	medical advice/attention. IF ON SKIN: Wash with plenty of water/soap. If skin irritation occurs: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage:	Store in accordance with local/regional/national regulations. Protect from sunlight.
Disposal:	Dispose of contents/container in accordance with local/regional/national/international regulations. Refer to manufacturer or supplier for information on recovery or recycling.
Other hazards which do not result Spilled product may create a dangerous slipping hazard. in GHS classification:	
3. Composition/information o	on ingredients
Mixtures	
Composition Comments:	The components are not hazardous or are below required disclosure limits.
4. First-aid measures	
Inhalation:	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention.
Ingestion:	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get medical advice/attention.
Skin Contact:	IF ON SKIN: Wash with plenty of water/soap. If skin irritation occurs: Get medical advice/attention.
Eye contact:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
Most important symptoms/effe	cts, acute and delayed
Symptoms:	Thermal burns. Respiratory irritation. Mechanical irritation.
Indication of immediate medica	I attention and special treatment needed
Treatment:	After adequate first aid, no further treatment is required unless

Treatment:After adequate first aid, no further treatment is required unless
symptoms reappear. Burns should be treated as thermal burns.
Molten resin will come off as healing occurs; therefore, immediate
removal from the skin is not necessary. Treatment should be directed
at the control of symptoms and the clinical condition of the patient. No
adverse effects due to ingestion are expected.

5. Fire-fighting measures General Fire Hazards: Polyethylene is a noncombustible solid, but dusts may form explosive mixtures in air. Product will burn at high temperatures but is not considered flammable. Under fire conditions, product will readily burn and emit irritating smoke.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water fog or water spray. Small fires: Dry chemical, carbon dioxide (CO2) or foam.
SDS US	

Unsuitable extinguishing
media:Avoid water in straight hose stream; will scatter and spread fire.Specific hazards arising from
the chemical:Upon heating, polyethylene may emit various oligomers, waxes and
oxygenated hydrocarbons as well as carbon dioxide, carbon monoxide and
small amounts of other organic vapors (e.g. aldehydes, acrolein). Inhalation
of these decomposition products may be hazardous. Powdered material
may form explosive dust-air mixtures. Risk of dust-air explosion is
increased if flammable vapors are also present. Static discharge: material
can accumulate static charges which may cause an incendiary electrical
discharge.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures:
 Keep upwind. Keep unauthorized personnel away. Move containers from fire area if you can do so without risk. Fight fire from maximum distance or use unmanned holders or monitor nozzles. Apply extinguishing media carefully to avoid creating airborne dust. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Water may be used to flood the area. Use water spray to cool fire exposed surfaces and to protect personnel. Avoid inhaling any smoke and combustion materials. Remove and isolate contaminated clothing and shoes. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
 Special protective equipment
 Wear positive pressure self-contained breathing apparatus (SCBA).

Special protective equipment Wear po for fire-fighters:

6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures:	Isolate area. Alert stand-by emergency and fire-fighting personnel. Wear appropriate personal protective equipment. For additional information, refer to Section 8.
Methods and material for containment and cleaning up:	Avoid standing or walking on spilled product. Spilled product may create a dangerous slipping hazard. In case of leakage, eliminate all ignition sources. Stop leak if safe to do so. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Use appropriate tools to put the spilled solid in an appropriate disposal or recovery container. Use non-sparking tools. Recover and reclaim or recycle, if practical.
Environmental Precautions:	Prevent entry into waterways, sewer, basements or confined areas.
7. Handling and storage	
Precautions for safe handling:	Keep away from uncontrolled heat and incompatible materials. Wash hands thoroughly after handling. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Ground all material handling and transfer equipment. For additional information on control of static and minimizing potential dust and fire hazards, refer to NFPA-654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids", current edition. Use in a well-ventilated area. Wear eye protection/protective gloves as needed/wear full face-shield during thermal processing if contact with molten material is possible/wear



respirator if dusty. Spilled product may create a dangerous slipping hazard. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities: Store in accordance with all current regulations and standards. Storage area should be clearly identified, well-illuminated and clear of obstruction. Store in closed, grounded and properly designed vessels. Keep away from uncontrolled heat and incompatible materials. Protect from sunlight. Outdoor storage of product in bags requires protection from ultra-violet sunlight by use of a UV stabilized bag or alternate means. Avoid accumulation of dust by frequent cleaning and suitable construction of storage and handling areas. Keep shovels and vacuum systems readily available for cleanup of loose material. DO NOT enter filled bulk containers and attempt to walk over product, due to risk of slipping and possible suffocation. Use a fall arrest system when working near open bulk containers.

8. Exposure controls/personal protection

Control Parameters Occupational Exposure Lim	hits During dusty conditions ACGIH recommends for Particles (insoluble or poorly soluble) not otherwise specified a TWA of 10 mg/m3 (inhalable particles), 3 mg/m3 TWA (respirable particles); OSHA recommends for Nuisance particulates a TWA of 15 mg/m3 (total dust), 5 mg/m3 TWA (respirable fraction).	
Appropriate Engineering Controls	Engineering methods to reduce hazardous exposure are preferred controls. Methods include mechanical ventilation (dilution and local exhaust) process or personal enclosure, remote and automated operation, control of process conditions, leak detection and repair systems, and other process modifications. 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). Ensure all exhaust ventilation systems are discharged to outdoors, away from air intakes and ignition sources. Supply sufficient replacement air to make up for air removed by exhaust systems. Administrative (procedure) controls and use of personal protective equipment may also be required.	
	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. Use only appropriately classified electrical equipment and powered industrial trucks.	
Individual protection measures, such as personal protective equipment		
General information:	Personal protective equipment (PPE) should not be considered a long-term solution to exposure control. Employer programs to properly select, fit, maintain and train employees to use equipment must accompany PPE. Consult a competent industrial hygiene resource, the PPE manufacturer's recommendation, and/or applicable regulations to determine hazard	

Eye/face protection: Safety glasses. Wear a face shield when working with molten material.

traction is recommended to help prevent slipping. Static Dissipative (SD)

Skin Protection
Hand Protection:Wear gloves to protect against thermal burns.Skin and Body
Protection:Wear appropriate clothing to prevent any possibility of skin contact. Wear
work clothes with long sleeves and pants. Safety footwear with good

potential and ensure adequate protection.

NOVA Chemicals®	Version: 1.2 Revision Date: 05/17/2023
	rated footwear is also recommended.
Respiratory Protection:	Appropriate NIOSH approved air-purifying respirator or self-contained breathing apparatus should be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.
Hygiene measures:	Use effective control measures and PPE to maintain worker exposure to concentrations that are below these limits. Ensure that eyewash stations and safety showers are in close proximity to work locations.

9. Physical and chemical properties

Physical state:solidForm:Pellets or Granular powderColor:white / colortess / translucentOdor:Minimal, MildOdor Threshold:No data available.pH:not applicablePH:not applicableInitial boiling point and boiling range:not applicableFlash Point:not applicableFlash Point:not applicableFlash Point:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explos:not applicableFlammability Limit - Upper (%):not applicableFlammability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:905 - 965 kg/m3Relative density:905 - 965 kg/m3Solubility (iother):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther information> 300 °C (> 572 °F)Viscosity:not applicableDecomposition temperature:> 300 °C (> 572 °F)Viscos	Appearance	
Color:white / colorless / translucentOdor:Minimal, MildOdor Threshold:No data available.pH:not applicableMelting point/freezing point:105 - 135 °C (221 - 275 °F) (Melting Point) 85 - 127 °C (185 - 261 °F) (Softening point)Initial boiling point and boiling range:not applicableFlash Point:not applicableFlash Point:not applicableFlash Point:not applicableFlash Point:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosityImot applicableFlammability Limit - Upper (%):not applicableFlammability Limit - Lower (%):not applicableVapor density:not applicableVapor density:not applicableVapor density:095 - 965 kg/m3Relative density:0,905 - 0.965Solubility (nwater:No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableDecomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableCharter informationKat available.Explosive properties:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicable	Physical state:	solid
Odor:Minimal, MildOdor Threshold:No data available.pH:not applicableMelting point/freezing point:105 - 135 °C (221 - 275 °F) (Melting Point) 85 - 127 °C (185 - 261 °F) (Softening point)Initial boiling point and boiling range:not applicableFlash Point:not applicableEvaporation rate:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limitsnot applicableFlammability Limit - Upper (%):not applicableVapor pressure:not applicableVapor density:not applicableVapor density:not applicableSolubility (ies)Solubility (ies)Solubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:No data available.	Form:	Pellets or Granular powder
Odor Threshold:No data available.pH:not applicableMelting point/freezing point:105 - 135 °C (221 - 275 °F) (Melting Point) 85 - 127 °C (185 - 261 °F) (Softening point)Initial boiling point and boiling range:not applicableFlash Point:not applicableEvaporation rate:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explos:limitsFlammability Limit - Upper (%):not applicableFlammability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:005 - 965 kg/m3Relative density:0.905 - 0.965Solubility in water:Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableDetermine> 300 °C (> 572 °F)Viscosity:not applicableDetermineNo data available.Determine> 300 °C (> 572 °F)Viscosity:not applicableDetermineNo data available.DetermineNo data available.Partition temperature:No data available.DetermineNo data available.DetermineNo data available.DetermineNo data available.DetermineNo data available.DetermineNo	Color:	white / colorless / translucent
pH:not applicableMelting point/freezing point:105 - 135 °C (221 - 275 °F) (Melting Point) 85 - 127 °C (185 - 261 °F) (Softening point)Initial boiling point and boiling range:not applicableFlash Point:not applicableFlash Point:not applicableEvaporation rate:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limits Flammability Limit - Upper (%):not applicableFlammability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:not applicableDensity:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:Ko data available.	Odor:	Minimal, Mild
Melting point/freezing point:105 - 135 °C (221 - 275 °F) (Melting Point) 85 - 127 °C (185 - 261 °F) (Softening point)Initial boiling point and boiling range:not applicableFlash Point:not applicableEvaporation rate:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limitsnot applicableFlammability Limit - Upper (%):not applicableFlammability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:not applicableDensity:905 - 965 kg/m3Solubility (ies)Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableDecomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:Kata available.	Odor Threshold:	No data available.
Initial boiling point and boiling range:not applicableFlash Point:not applicableEvaporation rate:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limitsMay form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limitsnot applicableFlammability Limit - Upper (%):not applicableParamability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:not applicableDensity:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility (ies)Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:Ko data available.	pH:	not applicable
Flash Point:not applicableEvaporation rate:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limitsImage: State St	Melting point/freezing point:	
Evaporation rate:not applicableFlammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limitsImage: State S	Initial boiling point and boiling range:	not applicable
Flammability (solid, gas):May form combustible dust concentrations in air [if small particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limitsImitsFlammability Limit - Upper (%):not applicableFlammability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:not applicableDensity:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility (ies)Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationKo data available.Explosive properties:No data available.	Flash Point:	not applicable
particles are generated during further processing, handling or by other means.]Upper/lower limit on flammability or explosive limitsFlammability Limit - Upper (%):not applicableFlammability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:not applicableDensity:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility (ies)Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableDecomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationKo data available.Explosive properties:No data available.	Evaporation rate:	not applicable
Flammability Limit - Upper (%):not applicableFlammability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:not applicableDensity:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility (ies)Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationKo data available.Explosive properties:No data available.	Flammability (solid, gas):	particles are generated during further processing,
Flammability Limit - Lower (%):not applicableVapor pressure:not applicableVapor density:not applicableDensity:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility(ies)Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationKata available.Explosive properties:No data available.	Upper/lower limit on flammability or explo	osive limits
Vapor pressure:not applicableVapor density:not applicableDensity:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility(ies)Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:Kata available.No data available.	Flammability Limit - Upper (%):	not applicable
Vapor density:not applicableDensity:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility(ies)Insoluble in waterSolubility other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationKo data available.Explosive properties:No data available.	Flammability Limit - Lower (%):	not applicable
Density:905 - 965 kg/m3Relative density:0.905 - 0.965Solubility(ies)Insoluble in waterSolubility in water:Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationKo data available.Explosive properties:No data available.	Vapor pressure:	not applicable
Relative density:0.905 - 0.965Solubility(ies)Insoluble in waterSolubility in water:Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationInsoluble in waterExplosive properties:No data available.	Vapor density:	not applicable
Solubility(ies)Insoluble in waterSolubility in water:Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:No data available.	Density:	905 - 965 kg/m3
Solubility in water:Insoluble in waterSolubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:No data available.	Relative density:	0.905 - 0.965
Solubility (other):No data available.Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:No data available.	Solubility(ies)	
Partition coefficient (n-octanol/water):not applicableAuto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationExplosive properties:No data available.	Solubility in water:	Insoluble in water
Auto-ignition temperature:No data available.Decomposition temperature:> 300 °C (> 572 °F)Viscosity:not applicableOther informationKon data available.Explosive properties:No data available.	Solubility (other):	No data available.
Decomposition temperature: > 300 °C (> 572 °F) Viscosity: not applicable Other information Explosive properties: No data available.	Partition coefficient (n-octanol/water):	not applicable
Viscosity: not applicable Other information Explosive properties: No data available.	Auto-ignition temperature:	No data available.
Other information Explosive properties: No data available.	Decomposition temperature:	> 300 °C (> 572 °F)
Explosive properties: No data available.	Viscosity:	not applicable
	Other information	
Oxidizing properties: not applicable	Explosive properties:	No data available.
	Oxidizing properties:	not applicable

10. Stability and reactivity

Reactivity:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization not likely to occur.
SDS_US	5

NOVA Chemicals®	Version: 1.2 Revision Date: 05/17/2023
Conditions to avoid:	Avoid exposing to extended periods of heat and contact with strong oxidizing substances.
Incompatible Materials:	Strong oxidizing agents. Organic solvents, ether, gasoline, lubricating oils, chlorinated hydrocarbons and aromatic hydrocarbons may react with and degrade polyethylene. Powdered material may form explosive dust-air mixtures. Risk of dust-air explosion is increased if flammable vapors are also present.
Hazardous Decomposition Products:	Upon decomposition, polyethylene may emit various oligomers, waxes and oxygenated hydrocarbons as well as carbon dioxide, carbon monoxide and small amounts of other organic vapors (e.g. aldehydes, acrolein). Inhalation of these decomposition products may be hazardous.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	During processing, thermal fumes and inhalation of fine particles may cause respiratory irritation.
Ingestion:	Ingestion of this product is not a likely route of exposure.
Skin Contact:	During processing, contact with powder or fines may cause mechanical irritation. Molten material will produce thermal burns.
Eye contact:	During processing, contact with powder or fines may cause mechanical irritation. Molten material will produce thermal burns.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	Respiratory irritation.
Ingestion:	No adverse effects due to ingestion are expected.
Skin Contact:	Mechanical irritation. Thermal burns. Negligible irritation of the skin based on chemical structure (polymer).
Eye contact:	Mechanical irritation. Thermal burns. May cause mild, short-lasting discomfort to eyes.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product:	LD 50: > 5,000 mg/kg (estimated)
Dermal Product:	Not classified for acute toxicity based on available data.
Inhalation Product:	Not classified for acute toxicity based on available data.
Repeated dose toxicity Product:	No data available.
Skin Corrosion/Irritation Product:	No data available.



Serious Eye Damage/Eye Irritati Product:	ion No data available.
Respiratory or Skin Sensitizatio Product:	n No data available.
Carcinogenicity Product:	Not classified
	ation of Carcinogenic Risks to Humans: carcinogenic components identified
	m (NTP) Report on Carcinogens: carcinogenic components identified
	ed Substances (29 CFR 1910.1001-1050), as amended: carcinogenic components identified
Germ Cell Mutagenicity	
In vitro Product:	There are no known or reported genetic effects.
In vivo Product:	There are no known or reported genetic effects.
Reproductive toxicity Product:	There are no known or reported reproductive effects.
Specific Target Organ Toxicity - Product:	- Single Exposure No data available.
Specific Target Organ Toxicity · Product:	- Repeated Exposure No data available.
Aspiration Hazard Product:	Not classified.
Other effects:	No data available.
12. Ecological information	
General information:	NOVAPOL® resins are expected to be inert in the environment. They float on water and are not biodegradable. They are not expected to bioconcentrate (accumulate in the food chain) due to their high molecular weight. NOVAPOL® resins are not expected to be toxic if ingested but may represent a choking hazard if ingested by waterfowl or aquatic life.
Ecotoxicity:	
Acute hazards to the aquatic	environment:
Fish Product:	LC 50 (96 h): > 100 mg/l
Aquatic Invertebrates Product:	EC 50 (Daphnia magna, 48 h): > 100 mg/l
Toxicity to Aquatic Plants Product:	EC 50 (72 h): > 100 mg/l

Chronic hazards to the aquatic environment:

Fish Product:	NOEC : > 100 mg/l
Aquatic Invertebrates Product:	NOEC : > 100 mg/l
Toxicity to Aquatic Plants Product:	NOEC : > 100 mg/l
Persistence and Degradability	
Biodegradation Product:	Not readily degradable. Under optimal oxidation conditions, >99% of polyethylene will remain intact after exposure to microbial actions. Product will slowly change (embrittle) in the presence of sunlight, but will not fully breakdown. Product buried in landfill has been found to be stable over time. No toxic degradation products are known to be produced.
BOD/COD Ratio Product:	No data available.
Bioaccumulative potential Bioconcentration Factor (BC Product:	CF) Polyethylene resins may accumulate in the digestive systems of birds and aquatic life, causing injury and possible death due to starvation.
Partition Coefficient n-octan Product:	ol / water (log Kow) not applicable
Mobility in soil:	Biologically persistent. This product has not been found to migrate through soils.
Other adverse effects:	Polyethylene resins are persistent in aquatic and terrestrial systems.
13. Disposal considerations	
Disposal instructions:	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Preferred disposal methods for polyethylene in order of preference are: 1) clean and reuse if possible, 2) recover and resell through plastic recyclers or resin brokers, 3) incinerate with waste heat recovery and 4) landfill. DO NOT ATTEMPT TO DISPOSE OF BY UNCONTROLLED INCINERATION. Open burning of plastics at landfills should not be undertaken.
Contaminated Packaging:	Check local, federal and state environmental regulations prior to disposal.
14. Transport information	

DOT

Not regulated.

ΙΑΤΑ

Not regulated.

IMDG

Not regulated.



15. Regulatory information

US Federal Regulations

- TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) None present or none present in regulated quantities.
- US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended None present or none present in regulated quantities.
- CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Combustible dust

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

None present or none present in regulated quantities.

- US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting None present or none present in regulated quantities.
- Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): None present or none present in regulated quantities.
- Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3) None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65 No ingredient requiring a warning under CA Prop 65.

Inventory Status

Canada DSL Inventory List:

On or in compliance with the inventory

US TSCA Inventory:

On or in compliance with the inventory

16. Other information, including date of preparation or last revision

Issue Date:	05/17/2023
Revision Information:	05/17/2023: SDS Update – phrase edits 05/25/2022: SDS Update – address updated 10/25/2019: SDS Update – phrase edits, section 15 updates 02/20/2018: New SDS
Version #:	1.2
Abbreviations and acronyms:	ACGIH = American Conference of Governmental Industrial Hygienists; BOD = Biochemical Oxygen Demand; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; DOT = Department of Transportation; EPA = Environmental Protection Agency; FDA = Food and Drug Administration; GHS = Globally Harmonized System for the Classification and Labelling of Chemicals; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association ICAO = International Civil Aviation Organization; IMDG = International Maritime Dangerous Goods; Kow = Octanol/water partition coefficient; LD50 = Lethal Dose 50%; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PPE = Personal Protective Equipment; RCRA =

Resource Conservation and Recovery Act; SARA = Superfund Amendments and Reauthorization Act; SCBA = Self Contained Breathing Apparatus; SDS = Safety Data Sheet; SEPA = State Environmental Protection Administration; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Further Information: Exposure to the Hazardous Combustion and Decomposition Products as described in the SDS, Sections 5 and 10, may be linked with various acute and chronic health effects. These effects include irritation of eyes and upper respiratory tract primarily from the aldehydes, breathing difficulties, systemic toxicity such as liver, kidney, and central nervous system effects.

NOVA Chemicals has monitored worker exposures to emissions during commercial-scale processing of polyethylene. Concentrations of hazardous decomposition products were determined to be well below established exposure limits in the workplace. "Quantitation of Employee Exposure to Emission Products Generated By Commercial-Scale Processing of Polyethylene" is available in the Am. Ind. Hyg. Assoc. J. 56:809-814 (1995) and "Quantification of Emission Compounds Generated During Commercial-Scale Processing of Advanced SCLAIRTECH™ Polyethylene" is available in the Journal of Plastic Film & Sheeting Volume 26 Issue 2, April 2010.

For information on ventilation considerations for the control of volatile air contaminants from polyethylene, please request a copy of NOVA Chemicals' publication, "Ventilation Guidelines for Heat-Processing Polyethylene Resins".

For additional information on unloading hopper cars containing plastic resins, refer to NOVA Chemicals' publication, "Hopper Car Unloading Guide".

For information on processing properties, selection of NOVAPOL resin grades, refer to the NOVAPOL Product Data Sheets available on our web site, under Products & Applications: <u>http://www.novachemicals.com</u>.

For additional information on preventing polyethylene resin loss, refer to published plastic industry publications and resources under Operation Clean Sweep® product stewardship program; now downloadable from the web at http://www.opcleansweep.org/.

Polyethylene fines and dust particles are listed as a Class I combustible dust by the National Fire Protection Association (see NFPA-68, Table F.1 (e)). For additional information on control of static and minimizing potential dust and fire hazards, refer to NFPA-654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids", current edition.

Explosivity testing was done on one NOVAPOL® LLDPE, one LDPE and one HDPE resins with Pmax = 4.8-5.7 bar, Kst = 12-17 (bar m/s) and Minimum Ignition Energy (MIE) = 1000-10,000; dust explosion class = St 1; this data was obtained for polyethylene with a final particle size of 100% < 250 um and moisture content between 0 and 0.2%. Similar results are expected for the remaining NOVAPOL® polyethylene resin grades.

For NOVAPOL resin grade specific information including food contact compliance statements, please contact your sales representative or refer to NOVA Chemicals' polyethylene Product Data Sheets.

Disclaimer:

ALTHOUGH THE INFORMATION CONTAINED IN THIS DOCUMENT IS PRESENTED IN GOOD FAITH, BASED ON AVAILABLE INFORMATION BELIEVED TO BE RELIABLE AT THE TIME OF PREPARATION OF THIS DOCUMENT, NOVA CHEMICALS MAKES NO WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION OR THE PRODUCT/MATERIALS DESCRIBED HEREIN, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES AND CONDITIONS (INCLUDING ALL WARRANTIES AND CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE). NO FREEDOM FROM INFRINGEMENT OF ANY PATENT OWNED BY NOVA CHEMICALS OR OTHERS IS TO BE INFERRED. THIS INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CONTACT NOVA CHEMICALS FOR THE MOST CURRENT VERSION OF THIS SDS. NOVA CHEMICALS DOES NOT ASSUME RESPONSIBILITY FOR SDS OBTAINED FROM THIRD PARTY SOURCES.

UNLESS SPECIFICALLY AGREED OTHERWISE, NOVA CHEMICALS DOES NOT TAKE RESPONSIBILITY FOR USE, TRANSPORTATION, STORAGE, HANDLING OR DISPOSAL OF THE PRODUCT/MATERIALS DESCRIBED HEREIN.

NOVA Chemicals[®]

is a registered trademark of NOVA Brands Ltd.; authorized use/utilisation autorisée.

Advanced SCLAIRTECH[™] is a trademark of NOVA Chemicals.

Operation Clean Sweep® is a registered service mark of Plastics Industry Association, Inc.

NOVAPOL® is a registered trademark of NOVA Brands Ltd.; authorized use/utilisation autorisée.