

SAFETY DATA SHEET

Polyethylene (PE) resin

Section 1. Identification

GHS product identifier	: Polyethylene (PE) resin
Product code	: SDS# 2000
Other means of identification	: <input checked="" type="checkbox"/> A-series, B-series, CAP-series, rCAP-series, CP-series, G-series, H-series, HB-series, HD-series, HP-series, HS-series, J-series, K-series, LL-series, LP-series, M-series, PH-series, T-series, TUB-series, Experimental PE formulations designated by an "x" in the grade name, PE homopolymer, PE copolymer, widespec PE, offgrade PE, and generic prime PE. Covers all nonpigmented commercial and experimental polyethylene homo- and copolymer products. For product specific information please see our technical and regulatory documents online at www.ineos.com or contact your INEOS account representative.
Product type	: <input checked="" type="checkbox"/> Pellets. or Flakes.
Recommended use of the chemical and restrictions to use	
Product use	: Industrial applications.
Area of application	: Industrial applications.
Supplier's details	: INEOS Olefins & Polymers USA 2600 South Shore Blvd. #500 League City, Texas 77573
e-mail address of person responsible for this SDS	: rcspolymers@ineos.com
Emergency telephone number (with hours of operation)	: USA:1 (800) 424-9300 Outside USA:+1 703-527-3887 (CHEMTREC)

Section 2. Hazards identification

Classification of the substance or mixture	: <input checked="" type="checkbox"/> COMBUSTIBLE DUSTS
GHS label elements	
Signal word	: <input checked="" type="checkbox"/> Warning
Hazard statements	: <input checked="" type="checkbox"/> No Code(s) - May form combustible dust concentrations in air.
Precautionary statements	
Prevention	: <input checked="" type="checkbox"/> Not applicable.
Response	: <input checked="" type="checkbox"/> Not applicable.
Storage	: <input checked="" type="checkbox"/> Not applicable.
Disposal	: <input checked="" type="checkbox"/> Not applicable.
Supplemental label elements	: Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.

Section 2. Hazards identification

Hazards not otherwise classified : COMBUSTIBLE DUSTS. If small particles are generated during further processing, handling, or by other means, combustible dust concentrations in air may form. Fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat. In the event that combustible dust is generated, the hazard is posed only by the size of the particle not its chemical content because all monomers, additives and pigment are totally encapsulated within the resin and cannot be released in pure form.

No ingredient(s) of unknown acute toxicity is intentionally used in this product.

Section 3. Composition/information on ingredients

Substance/mixture : Polymer

Common name and synonyms : A-series, B-series, CAP-series, rCAP-series, CP-series, G-series, H-series, HB-series, HD-series, HP-series, HS-series, J-series, K-series, LL-series, M-series, PH-series, T-series, TUB-series, Experimental PE formulations designated by an "x" in the grade name, PE homopolymer, PE copolymer, widespec PE, offgrade PE, and generic prime PE.

Covers all nonpigmented commercial and experimental polyethylene homo- and copolymer products.

For product specific information please see our technical and regulatory documents online at www.ineos.com or contact your INEOS account representative.

CAS number/other identifiers

CAS number : 9002-88-4 or 25087-34-7 or 25213-02-9

Ingredient name	Other names	%	CAS number
Ethene, homopolymer	Not available.	>98	9002-88-4
1-Butene, polymer with ethene	Not available.	>90	25087-34-7
1-Hexene, polymer with ethene	Not available.	>90	25213-02-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : If affected by fumes from heated material, remove from source of exposure and move the affected person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Skin contact** : If burned by contact with hot material, flush skin immediately with large amounts of cold water. If possible, submerge area in cold water. No attempt should be made to detach polymer adhering to the skin or to remove clothing attached with molten material. Thermal burns require immediate medical attention. Cold material: Wash with soap and water.

Section 4. First aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Suitable extinguishing media** : Use dry chemical powder.
- Unsuitable extinguishing media** : Do not use water jet.
- Specific hazards arising from the chemical** : May be combustible at high temperature.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Section 5. Fire-fighting measures

Burning can produce carbon monoxide and/or carbon dioxide and other harmful products. The major decomposition products are low molecular weight oligomers (C6-18) of polypropylene. Degradation products may include trace amounts of acrolein, formaldehyde, aldehydes, and other organic vapors.

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Granules spilled on the floor can cause slipping. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 8. Exposure controls/personal protection

1-Butene, polymer with ethene	None.
1-Hexene, polymer with ethene	None.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses with side shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. When handling hot material, wear heat-resistant protective gloves that are able to withstand the temperature of molten product. Cold material: None required. However, use of adequate ventilation is good industrial practice.



Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When handling hot material, wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the heated product. Cold material: None required. However, use of adequate ventilation is good industrial practice.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When handling hot material, wear heat-resistant protective gloves, clothing and face shield that are able to withstand the temperature of the molten product. Cold material: None required. However, use of adequate ventilation is good industrial practice.


Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	:  Solid. [Pellets./Flakes.]
Color	: White to yellowish.
Odor	: Not available.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: 110 to 167°C (230 to 332.6°F)
Boiling point	: Not available.
Flash point	: Not available.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not applicable.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	:  Not available.
Vapor density	: Not available.
Relative density	: 0.8 to 0.97
Solubility	: Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: The product is insoluble in water and octanol.
Auto-ignition temperature	: >340°C (>644°F)
Decomposition temperature	: >300°C (>572°F)
Viscosity	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: If heated to more than 300°C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing, and shortness of breath. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.
Incompatible materials	:  Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Burning can produce carbon monoxide and/or carbon dioxide and other harmful products. The major decomposition products are low molecular weight oligomers (C6-18) of polypropylene. Degradation products may include trace amounts of acrolein, formaldehyde, aldehydes, and other organic vapors.

Section 11. Toxicological information

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Information on toxicological effects (Listed for the components where information is available.)

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Ethene, homopolymer	LD50 Oral	Rat	8 g/kg	-
1-Butene, polymer with ethene	LD50 Oral	Rat	4 g/kg	-

- : Not available.

Irritation/Corrosion : Not available.

Sensitization : Not available.

Specific target organ toxicity (single exposure) : Not available.

Specific target organ toxicity (repeated exposure) : Not available.

Aspiration hazard : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
irritation
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Route	ATE value
Oral	12355.6 mg/kg

Mutagenicity

Conclusion/Summary : No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as a mutagen.

Carcinogenicity

Conclusion/Summary : None of the components in this product at concentrations greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

Classification

Product/ingredient name	OSHA	IARC	NTP
Ethene, homopolymer	-	3	-

+: Listed

- : Not applicable.

IARC 1 1, Carcinogenic to humans

IARC 2A 2A, Probably carcinogenic to humans

IARC 2B 2B, Possibly carcinogenic to humans

IARC 3 3, Not classifiable as to its carcinogenicity to humans

IARC 4 4, Probably not carcinogenic to humans

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

Section 12. Ecological information

Ecotoxicity

Conclusion/Summary : Wildlife may ingest plastic pellets or bags. Although not toxic, such materials may physically block the digestive system, causing starvation or death.

Persistence and degradability

: Not available.

Bioaccumulative potential

: Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc})

: Not available.

Mobility

: This product is not likely to move rapidly with surface or groundwater flows because of its low water solubility.

Other adverse effects

: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been

Section 13. Disposal considerations

cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	☒	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	☒ No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

Additional regulatory information may be available through our website, at www.ineos.com.

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients : No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : ☒ COMBUSTIBLE DUSTS

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Classification
Ethene, homopolymer	>98	COMBUSTIBLE DUSTS
1-hexene, polymer with ethene	>90	COMBUSTIBLE DUSTS
1-butene, polymer with ethene	>90	COMBUSTIBLE DUSTS

SARA 313

Not applicable.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	1	0
Flammability	1	0
Physical hazards	0	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Comb. Dusts	On basis of test data

History

Date of issue/Date of revision	: 09/10/2018
Date of previous issue	: No previous version.
Version	: 1.02

Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

References

- : HCS (U.S.A.)- Hazard Communication Standard
- International transport regulations Hazardous Substances Database (HSDB) : toxicology data file on the National Library of Medicine's (NLM) Toxicology Data Network (TOXNET).
- Registry of Toxic Effects of Chemical Substances (RTECS)
- Commission de la santé et de la sécurité du travail, Service du répertoire toxicologique (CSST) : information on chemical products used in the workplace including WHMIS classification.
- National Toxicology Program (NTP), Department of Health and Human Services: Report on Carcinogens
- International Agency for Research on Cancer (IARC), List of Carcinogens
- Occupational Safety and Health Administration (OSHA) (29 CFR 1910.1001-1052) – Carcinogens
- National Institute for Occupational Safety and Health; NIOSH Pocket Guide to Chemical Hazards.
- Aquatic Toxicity Information Retrieval (AQUIRE)

✔ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.