

SAFETY DATA SHEET

Polyethylene (PE) resin

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : Polyethylene (PE) resin

EC number : Exempted

REACH Registration number

Registration number	Legal entity
Exempt from REACH: Polymer	Not applicable

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

Product code : SDS# 2000

Product type : Pellets. or Flakes.

Other means of identification : A-series, B-series, CAP-series, CP-series, G-series, H60-series, HB-series, HD-series, HP-series, HS-series, J-series, K-series, LL-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.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.

Area of application : Industrial applications.

1.3 Details of the supplier of the safety data sheet

Supplier's details : INEOS USA LLC
2600 South Shore Blvd.
#500
League City, Texas 77573
281-535-6600

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

e-mail address of person responsible for this SDS : rcspolymers@ineos.com

1.4 Emergency telephone number

Supplier

Telephone number : USA:1 (800) 424-9300
Outside USA:+1 703-527-3887 (CHEMTREC)

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Product : Ethene, homopolymer
or
1-Butene, polymer with ethene
or
1-Hexene, polymer with ethene

Supplemental label elements : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII :

PBT	P	B	T	vPvB	vP	vB
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Other hazards which do not result in classification : 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.

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SECTION 3: Composition/information on ingredients

3.1 Substances : substance

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Ethene, homopolymer or 1-Butene, polymer with ethene or 1-Hexene, polymer with ethene	CAS: 9002-88-4 CAS: 25087-34-7 CAS: 25213-02-9	>98 >90 >90	Not classified. Not classified. Not classified.	[A] [A] [A]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[*] Substance

[A] Constituent

[B] Impurity

[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of 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. 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.
- Ingestion** : Wash out mouth with water. 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. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both 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

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SECTION 4: First aid measures

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

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : In case of fire, use water spray (fog), foam or dry chemical.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : May be combustible at high temperature.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
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.

5.3 Advice for firefighters

- 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised 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".

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SECTION 6: Accidental release measures

6.2 Environmental precautions : Avoid dispersal of spilt 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).

6.3 Methods and material 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, labelled 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 the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). 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. 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 earthing and bonding containers and equipment before transferring material.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, and sampling from storage tanks.

There is a risk of being splashed with molten materials. Heated material can cause thermal burns. Do not breathe gas, fumes or vapour. When handling hot material, wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the heated product. Pneumatic conveying of powder and pellets can generate large static electrical charges. Electrical discharge in presence of air can cause an explosion. Earth all equipment.

Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Fine dust clouds may form explosive mixtures with air. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

7.2 Conditions for safe storage, including any incompatibilities

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SECTION 7: Handling and storage

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

The main hazards are related to pallet stock slippage and forklift truck maneuvers, which can cause injury to personnel. It is highly recommended that adequate procedures covering storage handling of pallets are established and maintained. These procedures must be kept up to date and regularly audited. In most cases, best practice is to stack pallets no more than 2 high. However, facilities responsible for storing the material should perform a site specific risk assessment to determine whether pallets can be stacked safely.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour 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, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

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SECTION 8: Exposure controls/personal protection

- 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.
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 that are able to withstand the temperature of 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.
- 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Solid. [Pellets./Flakes.]
- Colour** : White to yellowish.
- Odour** : Not available.
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : 110 to 167°C
- Initial boiling point and boiling range** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not applicable.

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SECTION 9: Physical and chemical properties

Upper/lower flammability or explosive limits	: Not available.
Vapour pressure	: Not available.
Vapour density	: Not available.
Relative density	: 0.8 to 0.97
Solubility(ies)	: 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
Decomposition temperature	: >300°C
Viscosity	: Not available.
Explosive properties	: Not available.
Oxidising properties	: Not available.

9.2 Other information

Physical/chemical properties comments	: No additional information.
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SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
10.4 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 earthing and bonding containers and equipment before transferring material.
10.5 Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
10.6 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

11.1 Information on toxicological effects

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	-

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SECTION 11: Toxicological information

Conclusion/Summary : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Ethene, homopolymer	8000	N/A	N/A	N/A	N/A
1-Butene, polymer with ethene	4000	N/A	N/A	N/A	N/A

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitisation

Conclusion/Summary : Not available.

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.

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.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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

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

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SECTION 11: Toxicological information

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as 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

Not available.

Conclusion/Summary : Not available.

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

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Absorption : Inhalation

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

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

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Not available.

12.4 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.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Polyethylene (PE) resin	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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SECTION 12: Ecological information

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised 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.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

14.6 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.

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

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SECTION 15: Regulatory information

Regulatory information such as REACH compliance and chemical inventory status may be found under each product at www.ineos-op.com.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative
Regulation (EC) No. 1272/2008 [CLP]; European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), concluded in Geneva on 30 September 1957 plus amendments (Uniform text: Journal of Laws 27/2009 pos. 162 plus amendments); Regulation for the transport of dangerous materials on the Rhine (ADN); Occupational exposure limits; International regulations

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

Full text of abbreviated H statements

Not applicable.

Full text of classifications [CLP/GHS]

Not applicable.

Training advice

: Ensure operatives are trained to minimise exposures. Training staff on good practice.

Date of issue/ Date of revision

: 27/09/2019

Date of previous issue

: 17/09/2019

Version

: 1.02

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.