DELRIN ® acetal resin

Ref. 150000000569
Version 5.0 (replaces: Version 4.0)

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This Safety Data Sheet adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

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

1.1. Product identifier

Product name : DELRIN ® acetal resin

Types : 23P, 45P, 100P, 111DP, 111P, 111PA, 150, 500CP, 500P, 511DP, 511P, 588P, 900P, 911DP, 911P, 1700P, 1700SL, 127UV, 327UVE, 527UV, 927UV, 1727UV, 142CM, 300CP, 311DP, 390PM, 500LM, 542CM, 988PA, DE20130, DE20199, DE20321, DE20427, DE20308, HG900P, M509, M590 (1); 300AT (2) RA347UVE, RA500P

Recycling code : 1) ISO 11469 : >POM<; 2) ISO 11469 : >POM-ICD<

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

Use of the Substance/Mixture : Resin for moulding and/or extrusion

1.3. Details of the supplier of the safety data sheet

Company : Performance Specialty Products Iberica S.L.U.
Avda. Diagonal, 571
ES-08029 Barcelona
Spain

Telephone : +34-98-512-4000

Telefax : +34-98-512-4090

E-mail address : sds-support@dupont.com

1.4. Emergency telephone number

+(44)-870-8200418 (CHEMTREC)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.

2.2. Label elements

The product does not need to be labelled in accordance with Article 23 of Regulation 1272/2008/EC.

2.3. Other hazards

Endocrine disrupting properties (human health):
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Endocrine disrupting properties (environment):
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

PBT and vPvB assessment:
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Hazardous decomposition products
Formaldehyde
The EU classifies formaldehyde as a substance with possible risk of irreversible effect.

SECTION 3: Composition/information on ingredients

Chemical nature of the substance/mixture : Polyoxymethylene homopolymer

: Additives

3.1. Substances

Not applicable

3.2. Mixtures

Identification number	Component	Classification according to Regulation (EU) 1272/2008 (CLP)	Specific concentration limit/ M-Factors/ Acute toxicity estimate	%
CAS-No. 13463-67-7 **EC-No.** 236-675-5 **Index-No** 022-006-00-2 **REACH No.** 01-2119489379-17	Titanium dioxide	Carc. 2; H351	Oral ATE: > 5,000 mg/kg Inhalation ATE: > 5.09 mg/l (dust/mist)	>= 0< 5 %

Titanium dioxide : Note: Laboratory tests/assessments have shown that one or more components in this product is/are not bioavailable in sufficient concentrations to produce adverse effects, and therefore, do not need to be considered in the final hazard labeling of the product.

The above products are compliant to REACH registration obligations; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	:	Remove from exposure, lie down. Never give anything by mouth to an unconscious person. No hazards which require special first aid measures. If a person vomits when lying on his back, place him in the recovery position.
Inhalation	:	Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Consult a physician after significant exposure.
Skin contact	:	Cool skin rapidly with cold water after contact with molten material. Do not peel polymer from the skin. Obtain medical attention.
Eye contact	:	Flush eyes with water as a precaution. Obtain medical attention.
Ingestion	:	No hazards which require special first aid measures. Drink water as a precaution.

4.2. Most important symptoms and effects, both acute and delayed

no data available

4.3. Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO2), Dry powder, Foam, Water

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Large molten masses may ignite spontaneously in air. Water quenching is good practice. Under conditions giving incomplete combustion, hazardous gases produced may consist of: Carbon monoxide Carbon dioxide (CO2) (see also section 10)

5.3. Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Wear suitable protective equipment.

Further information	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Do not allow run-off from fire fighting to enter drains or water courses. Burns after ignition without external heat source (IEC 60695-11-10 : HB). Burns with colourless flame.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Ventilate the area. Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

Environmental precautions	:	Try to prevent the material from entering drains or water courses. Do not contaminate surface water.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up	:	Clean up promptly by sweeping or vacuum. Sweep up or vacuum up spillage and collect in suitable container for disposal.
Other information	:	Use mechanical handling equipment.

6.4. Reference to other sections

Not applicable

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	:	Protect from contamination. When opening containers, avoid breathing vapours that may be emanating. Open container only in well-ventilated area. Provide appropriate exhaust ventilation at dryers, machinery and at places where dust or volatiles can be generated. General precaution for all plastics and elastomers: For personal protection see section 8. In case of insufficient ventilation, wear suitable respiratory equipment. No special handling advice required.
Advice on protection against fire and explosion	:	Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).
Dust explosion class	:	no data available
Advice on general occupational hygiene	:	Wash hands before breaks and at the end of workday. General precaution for all plastics and elastomers: Do not breathe fumes evolved from hot polymer.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	No special storage conditions required. Keep container tightly closed in a dry and well-ventilated place. Protect from contamination.
Further information on	:	none

storage conditions

Advice on common storage : No special restrictions on storage with other products.

Other data : No decomposition if stored and applied as directed.

7.3. Specific end use(s)

Information on specific end use(s) of this product may be provided in a technical data sheet/annex to the SDS (if available).

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable. For further information on any control parameters provided, please refer to the relevant regulation.

Components with workplace control parameters

Type Form of exposure	Control parameters (Expressed as)	Update	Regulatory basis

Titanium dioxide (CAS-No. 13463-67-7)

Long-term exposure limit (8-hour TWA reference period) inhalable dust	10 mg/m3	2011-12-01	UK. EH40 WEL - Workplace Exposure Limits
Long-term exposure limit (8-hour TWA reference period) Respirable dust	4 mg/m3	2011-12-01	UK. EH40 WEL - Workplace Exposure Limits

Dust (inhalable and respirable fraction)

Long-term exposure limit (8-hour TWA reference period) Inhalable	10 mg/m3	2020-01-01	UK. EH40 WEL - Workplace Exposure Limits
Long-term exposure limit (8-hour TWA reference period) Respirable fraction	4 mg/m3	2020-01-01	UK. EH40 WEL - Workplace Exposure Limits

Formaldehyde (CAS-No. 50-00-0)

Long term exposure limit	0.37 mg/m3 0.3 ppm	2019-06-20	Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
	Further information: Dermal sensitisation; Carcinogens or mutagens		
Short term exposure limit	0.74 mg/m3 0.6 ppm	2019-06-20	Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
	Further information: Dermal sensitisation; Carcinogens or mutagens		
Long-term exposure limit (8-hour TWA reference period)	2.5 mg/m3 2 ppm	2020-01-01	UK. EH40 WEL - Workplace Exposure Limits
	Further information: Carc: Capable of causing cancer and/or heritable genetic damage.		

Short-term exposure limit (15-minute reference period)	2.5 mg/m3 2 ppm	2020-01-01	UK. EH40 WEL - Workplace Exposure Limits
	Further information: Carc: Capable of causing cancer and/or heritable genetic damage.		

Derived No Effect Level (DNEL)

- **Titanium dioxide**
  Type of Application (Use): Workers
  Exposure routes: Inhalation
  Health Effect: Long-term - local effects
  Value: 10 mg/m3

  Type of Application (Use): Consumers
  Exposure routes: Ingestion
  Health Effect: Long-term - systemic effects
  Value: 700 mg/kg body weight (bw) /day

Predicted No Effect Concentration (PNEC)

- **Titanium dioxide**
  Value: 0.184 mg/l
  Compartment: Fresh water

  Value: 0.018 mg/l
  Compartment: Marine water

  Value: 0.193 mg/l
  Compartment: Fresh water
  Remarks: Intermittent use/release

  Value: 100 mg/l
  Compartment: Sewage treatment plants

  Value: 1000 mg/kg dry weight (d.w.)
  Compartment: Fresh water sediment

  Value: 100 mg/kg dry weight (d.w.)
  Compartment: Marine sediment

  Value: 100 mg/kg dry weight (d.w.)
  Compartment: Soil

8.2. Exposure controls

Engineering measures	:	When hot processing this material, use local and/or general exhaust ventilation to maintain the concentration of vapors and fumes below exposure limits.
Eye/face protection	:	Safety glasses with side-shields

Hand protection	:	Wear tightly fitting chemical splash goggles and face shield when possibility exists for eye and face contact due to spattering or splashing of molten material. Material: Heat insulating gloves Protective gloves (Type : Kevlar(R) - heat resistant, use possible until worn out)
Skin and body protection	:	If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear. Regular cleaning of equipment, work area and clothing.
Respiratory protection	:	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Suitable respiratory equipment: Half mask with a particle filter FFP2/FFP3 (EN149)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	solid
	Form pellets
Colour	various
Odour	formaldehyde-like
Melting point/freezing point	Melting point/range: 172 - 184 °C
Boiling point or initial boiling point and boiling range	no data available
Flammability	no data available
Lower explosion limit and upper explosion limit / flammability limit	no data available
Flash point	Not applicable
Auto-ignition temperature	375 °C
Decomposition temperature	**Thermal decomposition** > 230 °C
pH	Not applicable
Viscosity	**Viscosity, kinematic** no data available
Solubility(ies)	**Water solubility** insoluble
Partition coefficient: n-octanol/water	no data available

Vapour pressure	no data available
Density and / or relative density	**Density** 1.35 - 1.45 g/cm3 Method: ISO 1183
Relative vapour density	no data available
Particle characteristics	no data available

9.2. Other information

No other data to be specially mentioned.

SECTION 10: Stability and reactivity

10.1. Reactivity	:	no data available
10.2. Chemical stability	:	no data available
10.3. Possibility of hazardous reactions	:	None. Further information : During drying, cleaning and moulding, small amounts of hazardous gases and/or particulate matter may be released. These may irritate eyes, nose and throat. Large molten masses may give off hazardous gases. Water quenching is good practice. Stable under normal conditions.
10.4. Conditions to avoid	:	Avoid heating for prolonged periods above the recommended upper processing limit.
10.5. Incompatible materials	:	Strong acids and oxidizing agents Strong bases halogenated compounds, except those already present in the formulation as supplied
10.6. Hazardous decomposition products	:	Formaldehyde

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (Acute oral toxicity)
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  LD50 / Rat : > 5,000 mg/kg
  Method: OECD Test Guideline 401

Acute toxicity (Acute dermal toxicity)

Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Acute toxicity (Acute inhalation toxicity)
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  LC50 / 4 h Rat : > 5.09 mg/l (dust/mist)
  Method: OECD Test Guideline 403

Skin corrosion/irritation
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  Rabbit
  Classification: No skin irritation
  Result: Slight or no skin irritation
  Method: OECD Test Guideline 404
  Minimal effects that do not meet the threshold for classification.

Serious eye damage/eye irritation
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  Rabbit
  Classification: No eye irritation
  Result: Slight or no eye irritation
  Method: OECD Test Guideline 405
  Minimal effects that do not meet the threshold for classification.

Respiratory or skin sensitisation
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  Guinea pig
  Classification: Does not cause skin sensitisation.
  Result: Does not cause skin sensitisation.
  Method: OECD Test Guideline 406

  Mouse
  Classification: Does not cause respiratory sensitisation.
  Result: Does not cause respiratory sensitisation.

Germ cell mutagenicity
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  Tumors were observed in laboratory animals, yet are not considered relevant to humans. Weight of evidence does not support classification as a carcinogen

Reproductive toxicity
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  Toxicity to reproduction assessment:
  No toxicity to reproduction Animal testing showed no reproductive toxicity. Animal testing did not show any effects on fertility.

  Assessment teratogenicity:
  Animal testing showed no developmental toxicity.

STOT - single exposure
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

  Ingestion Rat
  Exposure time: 90 d
  NOAEL: > 1,000 mg/kg
  Method: OECD Test Guideline 408
  No toxicologically significant effects were found.

Aspiration hazard
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

- Titanium dioxide
  No aspiration toxicity classification

Human experience

No human exposure data is available.

11.2. Information on other hazards

Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Note: Laboratory tests/assessments have shown that one or more components in this product is/are not bioavailable in sufficient concentrations to produce adverse effects, and therefore, do not need to be considered in the final hazard labeling of the product.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to aquatic plants

- Titanium dioxide
  NOEC / 7 d / Lemna minor (duckweed): 100 mg/l
  Method: OECD Test Guideline 221

Toxicity to aquatic invertebrates

- Titanium dioxide
  EC50 / 48 h / Daphnia magna (Water flea): > 100 mg/l
  Method: OECD Test Guideline 202

Chronic toxicity to fish

- Titanium dioxide
  NOEC / 6 d / Danio rerio (zebra fish): 160 mg/l
  Method: OECD Test Guideline 210

Chronic toxicity to aquatic Invertebrates

- Titanium dioxide

NOEC / 21 d / Daphnia magna (Water flea): 5 mg/l
Method: OECD Test Guideline 211

12.2. Persistence and degradability

Biodegradability

- Titanium dioxide
  Not biodegradable
  Not applicable

12.3. Bioaccumulative potential

Bioaccumulation

- Titanium dioxide
  Bioaccumulation is unlikely.

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6. Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7. Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	:	Like most thermoplastic plastics the product can be recycled. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Can be landfilled, when in compliance with local regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.
European Waste Catalogue	:	07 02 99: Wastes not otherwise specified.

number

SECTION 14: Transport information

ADR

14.1.	UN number or ID number:	Not applicable
14.2.	UN proper shipping name:	Not applicable
14.3.	Transport hazard class(es):	Not applicable
14.4.	Packing group:	Not applicable
14.5.	Environmental hazards:	none

14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IATA_C

14.1.	UN number or ID number:	Not applicable
14.2.	UN proper shipping name:	Not applicable
14.3.	Transport hazard class(es):	Not applicable
14.4.	Packing group:	Not applicable
14.5.	Environmental hazards:	none

14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IMDG

14.1.	UN number or ID number:	Not applicable
14.2.	UN proper shipping name:	Not applicable
14.3.	Transport hazard class(es):	Not applicable
14.4.	Packing group:	Not applicable
14.5.	Environmental hazards:	none

14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

14.7. Maritime transport in bulk according to IMO instruments
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

Not applicable

Major Accident Hazard Legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this/these product(s).

SECTION 16: Other information

Full text of H-Statements referred to under section 3.

H351	Suspected of causing cancer if inhaled.

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
EbC50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm
EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA):
vPvB	very Persistent and very Bioaccumulative

Restrictions on use

DELRIN ® acetal resin

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Version 5.0 (replaces: Version 4.0)

Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of the DuPont POLICY Regarding Medical Applications and DuPont CAUTION Regarding Medical Applications.

Further information
Before use read DuPont's safety information.
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™ Trademark of E.I. du Pont de Nemours and Company.
An Exposure Scenario (ES) is not required.

Note: The classification of substances listed in Annex VI to the CLP regulation are derived from assessment of the best knowledge and information available at the time of its publication or subsequent amendments.The information on components provided in sections 11 and 12 of this safety data sheet may in some cases not align with a legally binding classification on the basis of technical progress and availability of new information.

Significant change from previous version is denoted with a double bar.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.