SAFETY DATA SHEET

In accordance with the REACH Regulation

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name: **MALEN E FGAN 23-D003**

Chemical name: Low Density Polyethylene LDPE

CAS no.: 9002-88-4

REACH Registration no.: Not applicable – polymer. Registration number for monomer (ethylene) 01-2119462827-27-0011

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

Identified uses: Manufacture of containers by extrusion blow molding. Manufacture of sleeve film and shrink sleeve film.

Uses advised against: Other uses then those listed above. This product may not be used in medical and pharmaceutical applications.

1.3. Details of the supplier of the safety data sheet

Manufacturer: ORLEN S.A.

Address: 09-411 Płock, ul. Chemików 7, Poland

Phone/Fax: Central: Telephone no. (+48 24) 365 00 00; Fax no. (+48 24) 365 45 55

Email : reach@orlen.pl (competent person responsible for the safety data sheet)

1.4. Emergency telephone number

On-site Fire Brigade

The National Emergency Centre for the Transport of Dangerous Goods – SPOT: +48 24 365 70 32, +48 24 365 70 33 (available 24h)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification / Hazard	According to Regulation (EC) no. 1272/2008 (CLP)
for physical-chemical properties:	Not classified
for human health:	Not classified
for the environment:	Not classified

2.2. Label elements

Hazard pictogram: not applicable

Signal word: not applicable

Hazard statements: not applicable

Precautionary statements: not applicable

2.3. Other hazards

Contact with molten product may cause thermal burns.
Toxic gases may be released at elevated temperatures and during combustion.
Polyethylene dust can form an explosive mixture with air.
The product can accumulate electrostatic charges, which can be a source of ignition in case of discharges.
The product does not contain substances, that meet the criteria for PBT or vPvB in accordance with Annex XIII.
The product does not contain substances, that have endocrine disrupting properties.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Substance name	Formula	% wt.	CAS no.	EC no.	Index no.
Polyethylene	(C2H4)n	100	9002-88-4	Not applicable	Not applicable

The substance contains antioxidants that are part of the substance. These additives do not affect the classification of the product.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation:

No harmful vapours causing irritation of the respiratory system are emitted at room temperature. In case of exposure to inhalation of vapours at elevated temperature (heat treatment, fire), remove the victim to fresh air. If not breathing, apply artificial respiration. Seek medical advice.

Contact with skin:

At room temperature, the product does not cause skin irritation. In case of contact with hot or molten product, immerse the burnt part of the body in water or rinse with plenty of cold water. Do not attempt to remove solidified product from skin (risk of permanent injuries). Seek medical advice.

Contact with eyes:

Remove contact lenses, if possible. Flush contaminated eyes with plenty of water for at least 15 minutes holding the eyelids open. Seek medical advice.

Ingestion:

Rinse mouth with water. If disturbing symptoms appear, seek medical advice.

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

Contact with eyes: mechanical contamination. Dust and/or thermal decomposition products may cause eye irritation. Contact with hot product may cause serious burns.
Inhalation: dust and/or thermal decomposition products may cause irritation of the respiratory system.
Contact with skin: repeated and prolonged skin contact may cause skin irritation. Contact with hot product may cause serious burns.
Ingestion: digestive system irritation.
Refer also to section 11 of the safety data sheet.

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

Burns after disinfection can be treat as normal thermal burn. Show the safety data sheet, label or packaging to a medical personnel providing first aid.
Note to the physician: Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media: water mist, dry chemical powder, foam.
Unsuitable Extinguishing Media: water jet (may lead to a steam explosion and spread of fire).

5.2. Special hazards arising from the substance or mixture

During combustion large amount of heat and dense black smoke are generated. Hazardous decomposition products are formed: carbon oxides. Decomposition products may also include intermediate thermo-oxidative degradation products (literature data: alkene, formaldehyde, acetaldehyde, acrylaldehyde, formic acid, acetic acid). These substances may be toxic or irritant. Avoid breathing combustion products, it can be hazardous to your health.

5.3. Advice for firefighters

Follow the guidelines for the fire extinguishment of chemicals. In case of fire, isolate the fire area as soon as possible. Move pallets from the fire area, if this can be done without risk. Cool down imperilled containers with water spray.
Prevent from entering contaminated water and other extinguishing agents into sewage system and water. Dispose of waste water and residues in accordance with applicable regulations.
People should be properly trained and equipped with respiratory protection equipment: a mask with a universal filter and oxygen mask in closed rooms.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use adequate personal protective equipment as required in Section 8 of the safety data sheet.
Spilled granules may cause a slipping hazard.
Avoid dust generation and dust accumulation. Avoid inhalation of dust.
Take precautionary measures against static discharges.
Avoid eye and skin contact with molten product.

6.2. Environmental precautions

Do not allow the product to get into ground and surface waters, watercourses and soil. Product may cause mechanical blockage of water flow.

6.3. Methods and material for containment and cleaning up

Collect spilled product into a container and dispose of waste in accordance with applicable regulations.

6.4. Reference to other sections

Refer to Sections 8 and 13 of the safety data sheet.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Recommendations for safe handling: The product is not dangerous at ambient temperature and in the form of granules.
Gaseous products, which may include decomposition products, may be present during processing.
Ensure adequate ventilation of the workplace.
Prevent accumulation of dust. Areas and spaces that cannot be accessed should be sealed to prevent accumulation of dust.
Collect spilled granules to eliminate the risk of slipping.
Observe the principles of good industrial hygiene: do not eat, drink or smoke in the workplace, wash hands with water after work. Do not wear contaminated clothing. Take off immediately all contaminated clothing and wash it before reuse. Use adequate personal protective equipment as required in Section 8 of the safety data sheet.
Recommendations for fire and explosion protection: During processing when dust is generated, it may be necessary to use non-sparking and explosion-proof equipment.
Take action to prevent static discharges. Use proper grounding during processing and transport of the product in bulk.

7.2. Conditions for safe storage, including any incompatibilities

Store in accordance with applicable fire protection regulations.
Palletized product should be stored on a solid and stable surface.
Do not use fire near the storage area. Keep in a safe distance from heating equipment.
Take action to prevent static discharges. Use proper grounding when product is stored in bulk.
Protect against exposure to extreme temperatures and direct exposure to ultraviolet radiation.
Protect against moisture.
Protect against contact with strong oxidants.

7.3. Specific end use(s)

See sub-section 1.2. For additional information contact your supplier.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Processing products:
dust not classified for toxicity – inhalable fraction: PL: NDS: 10 mg/m^3, NDSCh: –, NDSP: –
EU OELs: –

Possible products of thermo-oxidative decomposition:
formaldehyde (CAS 50-00-0): PL: NDS: 0.37 mg/m^3, NDSCh: 0.74 mg/m^3, NDSP: –, dermal
EU OELs: –
acetaldehyde (CAS 75-07-0): PL: NDS: –, NDSCh: –, NDSP: 45 mg/m^3
EU OELs: –
acrylaldehyde (CAS 107-02-8): PL: NDS: 0.05 mg/m^3, NDSCh: 0.1 mg/m^3, NDSP: –, dermal

EU OELs 8h: 0.05 mg/m^3, 0.02 ppm, 15 min.: 0.12 mg/m^3, 0.05 ppm (2017)

formic acid (CAS 64-18-6): PL: NDS: 5 mg/m^3, NDSCh: 15 mg/m^3, NDSP: –
EU OELs 8h: 9 mg/m^3, 5 ppm, 15 min.: – (2006)

acetic acid (CAS 64-19-7): PL: NDS: 25 mg/m^3, NDSCh: 50 mg/m^3, NDSP: –
EU OELs 8h: 25 mg/m^3, 10 ppm, 15 min.: 50 mg/m^3, 20 ppm (2017)

PL: Rozporządzenie Ministra Rodziny, Pracy i Polityki Społecznej z dnia 12 czerwca 2018 r. w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy (Dz.U. 2018 poz. 1286, Dz.U. 2020 poz. 61)
EU: Directive 2000/39/EC with amendments

DNEL/PNEC: Not applicable

8.2. Exposure control

Appropriate engineering controls:

Provide general and/or local exhaust ventilation to keep vapours concentration below harmful limits. It is recommended to equip the workplace with the eyewash station.

Eye and face protection:

Safety glasses (in accordance with EN 166).

Skin protection:

Protective gloves e.g. nitrile rubber (according with EN 374), in contact with hot product gloves should be heat resistant and thermally insulated (in accordance with EN 407). Selection of the glove material requires consideration of the penetration times, rates of diffusion and the degradation. It is recommended to change gloves regularly or immediately if they are used or damaged (torn or punctured) or its appearance change (colour, elasticity, shape).

Protective clothing and antistatic boots.

Respiratory protection:

Not required under normal conditions of use. If ventilation is insufficient in the workplace or permissible exposure limits of thermo-oxidative decomposition products are exceeded, use a gas mask with a suitable filer cartridge: A1 + formaldehyde type (organic vapour + formaldehyde) or B type (acetic acid, formic acid) (in accordance with EN 14387).

If exposure limits for dust are exceeded, use a mask with a dust filter.

Thermal hazards:

Heat resistant and thermally insulated gloves in contact with hot material.

Environmental exposure controls:

Prevent from entering into soil, sewage, and watercourses.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

a) Physical state	Solid, granules
b) Colour	White, semi-transparent or having a colour from the technological process
c) Odour	Odourless
d) Melting point/freezing point	117°C (method A.1)
e) Boiling point or initial boiling point and boiling range	It doesn't boil (method A.2)
f) Flammability	The product ignites on contact with an external fire source, but without contact with an external source of fire does not support combustion
g) Lower and upper explosion limit	Not applicable. Granules – not hazardous. Polyethylene dust can form an explosive mixture with air
h) Flash point	243°C (open cup, PN-EN ISO 2592)
i) Auto-ignition temperature	435°C (pressure 100.15 kPa, auto-ignition delay time 19 s, DIN 51794)
j) Decomposition temperature	Thermal decompositions 433°C / nitrogen, thermo-oxidative decompositions ca. 250°C/air (method A.2)
k) pH	Not applicable
l) Kinematic viscosity	Not applicable
m) Solubility	Water: 2.4 mg/l (20°C, method A.20)
n) Partition coefficient n-octanol/water (log value)	Not applicable
o) Vapour pressure	Not applicable
p) Density and/or relative density	0.92 ÷ 0.93 g/cm^3 (23°C, method A.3), moulder

q) Relative vapour density	Not applicable
r) Particle characteristics	Granules

9.2. Other information

Not known.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

The substance is not reactive under normal conditions of use. Oxidation is possible under certain conditions (temperature, oxygen access).

10.2. Chemical stability

The product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3. Possibility of hazardous reactions

Polyethylene dust can form an explosive mixture with air.
The product can accumulate electrostatic charges, which can be a source of ignition in case of discharges.

10.4. Conditions to avoid

Avoid dust accumulation. Do not heat above 250°C. Keep away from sources of fire and ultraviolet radiation.

10.5. Incompatible materials

Strong oxidizers, strong solvents, aromatic hydrocarbons, petrol, lubricants.

10.6. Hazardous decomposition products

Not known. Hazardous combustion products are included in Section 5 of the safety data sheet.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Acute toxicity:

Based on available data, the classification criteria are not met.

Polyethylene (average molecular weight 450 g/mol)
LD50 (oral, rat) > 2000 mg/kg.
Polyethylene (average molecular weight 655 g/mol)
LD50 (oral, rat) > 5000 mg/kg

Skin corrosion/irritation:

Based on available data, the classification criteria are not met.

Polyethylene (average molecular weight 450 g/mol)
rabbit, 0.5 g PE/0,5 ml water: no irritation or corrosive effects.
Polyethylene (average molecular weight 655 g/mol)
rabbit, 0.5 g PE/0,5 ml water: mild irritation.

Serious eye damage/irritation:

Based on available data, the classification criteria are not met.

Polyethylene (average molecular weight 450 g/mol)
rabbit, product in solid state): mild irritation.
Polyethylene (average molecular weight 655 g/mol)
rabbit, product in solid: mild irritation.
rabbit, 13 % PE/water: no corneal abrasion, minimal irritation.

Respiratory or skin sensitisation:

Based on available data, the classification criteria are not met.

Germ cell mutagenicity:

Based on available data, the classification criteria are not met.

Carcinogenicity:

Based on available data, the classification criteria are not met.

Reproductive toxicity:

Based on available data, the classification criteria are not met.

STOT-single exposure:

Based on available data, the classification criteria are not met.

STOT-repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard:

Based on the data available, classification criteria are not met.

11.2. Information on other hazards

The product does not contain substances that have endocrine disrupting properties.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Based on the data available, classification criteria are not met.

12.2. Persistence and degradability

The product is not readily biodegradable.

12.3. Bioaccumulative potential

Due to the high molecular weight, significant accumulation in organisms is not expected.

12.4. Mobility in soil

The product is insoluble in water, has a lower density than water, and it will float on water.

12.5. Results of PBT and vPvB assessment

The product does not contain substances that meet the criteria for PBT or vPvB in accordance with Annex XIII.

12.6. Endocrine disrupting properties

The product does not contain substances that have endocrine disrupting properties.

12.7. Other adverse effects

Granules: choking hazard if swallowed by aquatic organisms or waterfowl.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recommended waste code:
07 02 13 waste plastic
20 01 39 plastics
15 01 02 plastic packaging

NOTE: Since waste code is assigned based on the source of origin, the end user should define the wastes and assign a proper waste code based on specific conditions of use, in accordance with applicable regulations.

Do not discharge into drains (mechanical blockage may occur). Do not allow contamination of surface and ground water. Recycle or dispose of waste in compliance with current legislation.

Recycle or dispose of packaging waste in compliance with current legislation. NOTE: Only empty and clean packaging can be recycled. Use services of authorized companies.

Directive 2008/98/EC of the European Parliament and of the Council of the Member State

SECTION 14: TRANSPORT INFORMATION

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	Not applicable
14.6. Special precautions for users	Not applicable
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

See also section 13 of this Safety Data Sheet

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and

Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (with amendments)

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (with amendments)

Regulation (EU) *2016/425* of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC

15.2. Chemical safety assessment

A chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

The safety data sheet was compiled on the basis of literature data ("Final report on the safety assessment of polyethylene"; Int J Toxicol. 2007;26 Suppl 1:115-27) and applicable regulations.

Scope of revision: Version 2 : section :1.3..

Information provided herein serves only as guidelines for safe transport, distribution, handling and storage. It cannot be considered as a quality certificate.

This information applies only to specific material designated and may not be suitable for such material used in combination with any other materials or in any other manner not described in this document.

The product user must observe all applicable standards and regulations and is liable for improper use of information contained in the safety data sheet and improper use of the product.

Additional information to ensure protection of human health and the environment

The employer is obliged to comply with the provisions described in regulations listed in section 15 of the safety data sheet (if applicable to a particular case):

- workers should be trained in terms of health hazard, OHS requirements, PPE usage, accidents prevention as well as proper rescue operations etc.,
- health checkup for employees,
- control the working environment, in particular methods for early exposure detection should be used,
- keep the registry of work and workers,
- undertake measures to reduce exposure.

A list of relevant hazard statements and/or precautionary statements which are not written out in full under Sections 2 to 15

Not applicable.

Legend to abbreviations and acronyms used in the safety data sheet

NDS	Threshold Limit Value (TWA)
NDSCh	Short Term Exposure Limit (STEL)
NDSP	Threshold Limit Value-Ceiling
OELs	Occupational Exposure Limits
vPvB	very Persistent, very Bioaccumulative (substance)
PBT	Persistent, bioaccumulative, and toxic (substance)
PNEC	Predicted No Effect Concentration
DNEL	Derived No Effect Level
LD_{50}	Dose of a tested substance causing 50% lethality during a specified time interval

Exposure scenarios: not required.