SABIC® LDPE 2100N0W

Low density polyethylene for Blown film

Description

SABIC® LDPE 2100N0W is a grade with very good toughness and biaxial shrink properties.
The material contains no additives, has a very low energy consumption during processing and has good draw down ability.

Application

SABIC® LDPE 2100N0W is a heavy duty film grade typically used for applications like shrink hoods, industrial sacks, carrier bags and liners.
SABIC® LDPE 2100N0W can typically be used for food applications due to very low migration levels.

Film properties

Film properties have been measured at 50 µm films with a BUR of 3.
Films have been produced on Kiefel IBC film blown line at 200 kg/h. Die size 200 mm, die gap of 0.8 mm.

This product is not intended for and must not be used in any pharmaceutical/medical applications.

Typical data. Revision 20150617

Properties	Units SI	Values	Test methods
Polymer properties			
Melt flow rate (MFR)			ISO 1133
at 190 °C and 2.16 kg	dg/min	**0.33**	
Density	kg/m³	**921**	ISO 1183 (A)
Optical properties			
Haze	%	**12**	ASTM D1003A
Clarity	mV	**50**	SABIC method
Film properties			
Impact strength	kJ/m	**30**	ASTM D4272
Tear strength TD	kN/m	**30**	ISO 6383-2
Tensile test film			ISO 527-3
Yield stress TD	MPa	**11**	
Yield stress MD	MPa	**11**	
Stress at break TD	MPa	**23**	
Stress at break MD	MPa	**28**	
Strain at break TD	%	**>500**	
Strain at break MD	%	**>200**	
Modulus of elasticity TD	MPa	**190**	
Modulus of elasticity MD	MPa	**190**	
Coefficient of friction	-	**1.0**	ASTM D1894
Blocking	g	**20**	SABIC method
Re-blocking	g	**10**	SABIC method
Thermal properties			
Vicat softening temperature			ISO 306
at 10 N (VST/A)	°C	**93**	

internet www.SABIC-europe.com
email TCC.TM-PE@SABIC-europe.com

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Health, Safety and Food Contact regulations. Detailed information is provided in the relevant Material Safety Datasheet and or Standard Food Declaration, available on the Internet (www.SABIC-europe.com). Additional specific information can be requested via your local Sales Office.

Quality. SABIC Europe is fully certified in accordance with the internationally accepted quality standard ISO 9001.

Storage and handling. Polyethylenes resins (in pelletised or powder form) should be stored in such a way that it prevents exposure to direct sunlight and/or heat, as this may lead to quality deterioration. The storage location should also be dry, dust free and the ambient temperature should not exceed 50 °C. Not complying with these precautionary measures can lead to a degradation of the product which can result in colour changes, bad smell and inadequate product performance. It is also advisable to process polyethylene resins (in pelletised or powder form) within 6 months after delivery, this because also excessive aging of polyethylene can lead to a deterioration in quality.

Environment and recycling. The environmental aspects of any packaging material do not only imply waste issues but have to be considered in relation with the use of natural resources, the preservations of foodstuffs, etc. SABIC Europe considers polyethylene to be an environmentally efficient packaging material. Its low specific energy consumption and insignificant emissions to air and water designate polyethylene as the ecological alternative in comparison with the traditional packaging materials. Recycling of packaging materials is supported by SABIC Europe whenever ecological and social benefits are achieved and where a social infrastructure for selective collecting and sorting of packaging is fostered. Whenever 'thermal' recycling of packaging (i.e. incineration with energy recovery) is carried out, polyethylene -with its fairly simple molecular structure and low amount of additives- is considered to be a trouble-free fuel.

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Version: September 23, 2021

DECLARATION

According to the recipe in the production of **SABIC® LDPE 2100N0W - 00900** the following substances as such are not intentionally used or added:

- Substances of Very High Concern (SVHC), included in the most recent and authentic "Candidate List of Substances of Very High Concern for Authorisation", in a concentration above the threshold limit of 0.1%, as published by the European Chemicals Agency (ECHA) on http://echa.europa.eu/web/guest/candidate-list-table, dated July 8, 2021.
- Acetone
- Acetyl tributyl citrate (ATBC)
- Acrylamide(s)
- Acrylonitrile
- Active and intelligent materials as defined in Commission Regulation (EC) No 450/2009 of 29 May 2009.
- AlkylPhenols (AP) and AlkylPhenol Ethoxylates (APE) (e.g. nonylphenol or nonylphenol ethoxylates)
- Amide solvents such as, but not limited to, N,N-dimethylformamide (DMF), N,N-dimethylacetamide (DMA) and N-methyl-2-pyrrolidone (NMP)
- Amine catalysts, amine reagents, amine solvents
- Anisoles (incl. chloro and bromo anisoles)
- Anthraquinone and its derivatives
- Antimicrobials (antibiotics, disinfectants, antiseptics)
- Antimony trioxide, antimony pentoxide
- (Aromatic) diamines (e.g. benzidine, 4,4'-methylenedianiline (MDA))
- Asbestos
- Azides
- Aziridine(s)
- Azodicarbonamide(s), hydrazine(s)
- Azo-dyes, azo-pigments and azo-colorants
- BADGE, BFDGE or NOGE and derivatives as referred to in Commission Regulation (EC) No 1895/2005 of 18 November 2005 on the restriction of use of certain epoxy derivatives
- Benzene
- Benzophenone and its derivatives
- Benzo[a]pyrene, benzo[e]pyrene
- Benzotriazole (BTA)
- Biocides (preservatives, insecticides, disinfectants, antiseptics, pesticides, fumigants)
- Bisphenol-A, -AP, -AF, -B, -BP, -C, -C2, -E, -F, -G, -M- S, -P, -PH, -TMC, -Z

- Boric acid; diboron trioxide; tetraboron disodium heptaoxide, hydrate; disodium tetraborate, anhydrous; orthoboric acid sodium salt; disodium tetraborate decahydrate; disodium tetraborate pentahydrate
- Butylated hydroxyanisole (BHA)
- Butylated hydroxytoluene (BHT)
- Carbamates
- Chlorinated paraffins (SCCP, MCCP, LCCP)
- Chlorobenzene
- Chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs)
- Chlorophenols (e.g. pentachlorophenol)
- 2-Chloro-propanol
- 3-Chloro-1,2-propanediol (3-MCPD)
- Conflict Minerals (cassiterite / tin; columbite-tantalite (coltan) / tantalum; wolframite / tungsten and gold), as referred to in Title XV, Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act
- Cyanides
- Cytotoxins, endotoxins, hormones
- 1,3-Dichloro-2-propanol (1,3-DCP)
- Dimethylfumarate (DMF)
- Dioxins and furans
- Endocrine disruptors
- 2-Ethylhexylhexanoic acid (2-EH)
- Ethylene oxide
- Engineered nanomaterials
- Epichlorohydrin
- Formaldehyde
- Flame retardants (incl. chlorinated, brominated, phosphorous-based (organophosphorus) compounds) (e.g. HBCD, TBBPA, phosphinates)
- Fragrances, perfumes
- Genetically Modified Organisms (GMO) or substances derived thereof
- Glycolethers
- Glyoxal (ethanedial)
- Ground bamboo, bamboo flour or fibers, corn flour
- Human pathogens
- Human substances and substances of human origin (e.g. blood, DNA, insulin)
- (Iso)cyanates
- Latex, natural rubber
- Melamine

- Metals: Arsenic (As), Cadmium (Cd), hexavalent Chromium (Cr^{6+}), Lead (Pb), Mercury (Hg), Gold (Au), Iridium (Ir), Molybdenium (Mo), Nickel (Ni), Osmium (Os), Palladium (Pd), Platinum (Pt), Rhodium (Rh), Ruthenium (Ru), Selenium (Se), Silver (Ag), Thallium (Tl), Tin (Sn), Vanadium (V).
- Methylene chloride
- Methyl Ethyl Ketone (MEK)
- Methyl IsoButyl Ketone (MIBK)
- Microorganisms / Microbes (e.g. bacteria, fungi, yeasts, moulds, archaea, protists, viruses)
- Nitrates, Nitrites, Nitric acid, Nitrous acid, Nitrosating agents, Nitrating agents
- Nitro compounds (aliphatic and aromatic) such as, but not limited to, nitrosamines, nitroso compounds, nitroalkanes, nitroalkenes, nitrocellulose, nitrofurazone and nitrobenzene.
- Organotin (organostannic) compounds (mono-, di-, tri-alkyltins and their derivatives, such as, but not limited to MBT, DBT, TBT, TeBT, MOT, DOT, TPhT, TcMT)
- Ozone Depleting Substances (ODS) according to the Montreal protocol or EU Regulation (EU) No 2017/265 amending Regulation (EC) No 1005/2009.
- Paint-Wetting Impairment Substances (PWIS)
- Parabens
- Perfluorinated organic compounds (PFC)
- (Polymeric) Per- and PolyFluorinated Alkyl Substances (PFAS) including, but not limited to:
  - Per- and PolyFluorinated Carboxylic Acids (PFCA) and their derivatives (e.g. Long Chain PerFluorinated Alkyl Carboxylates (LCPFAC) and their salts and precursors, TFA, PFPA, HFBA, PFHxA, PFOA, PFNA and "GenX substances")
  - Per- and PolyFluorinated Sulfonic Acids (PFSA) and their derivatives (e.g. PFBS, PFHxS, PFOS, PFOSA)
  - PerFluoroEther Carboxylic Acids (PFECA) and their derivatives
  - PerFluoroEther Sulfonic Acids (PFESA) and their derivatives
  - PerFluoroAlkyl Phosphonic or Phosphinic Acids (PFPhA, PFPiA) and their derivatives
  - Fluorinated polymers (e.g. PTFE, FEP, PVDF, PVF)
  - PerFluoroPolyEthers (PFPE)
- (very) Persistent, (very) Bioaccumulative and/or Toxic substances (PBT and/or vPvB)
- Persistent Organic Pollutants (POP) according to the Stockholm Convention or EU Regulation (EC) No 850/2004 (amending Directive 79/117/EEC), recast by EU Regulation (EU) No 2019/1021, including amendments up to and including Commission Delegated Regulation (EU) 2020/1204.
- Phenol, resorcinols, cresols, catechols
- Photoinitiators (e.g. isopropylthioxanthone (ITX))
- Plasticizers, softeners (Tris(2-chloroethyl) phosphate (TCEP), trimellitates, adipates, sebacates, maleates, sulfonamides)

- Polybrominated Terphenyls (PBT) / Polychlorinated Biphenyls (PCB)
- Polybrominated Biphenyls (PBB) or Polybrominated Diphenyl Ethers (PBDE)
- Polychlorinated Phenols (PCP) / Polychlorinated Naphthalenes (PCN)
- Polycyclic Aromatic Hydrocarbons (PAH)
- Polyvinylchloride (PVC), Polyvinylidene chloride (PVDC), Chlorinated Polyvinylchloride (CPVC) and Polychloroprene (neoprene)
- Primary Aromatic Amines (PAA) and substances that can generate primary aromatic amines.
- Pyridine(s)
- Quaternary ammonium compounds
- Radioactive substances
- Rare-earth elements: Cerium (Ce), Dysprosium (Dy), Erbium (Er), Europium (Eu), Gadolinium (Gd), Holmium (Ho), Lanthanum (La), Lutetium (Lu), Neodymium (Nd), Praseodymium (Pr), Promethium (Pm), Samarium (Sm), Scandium (Sc), Terbium (Tb), Thulium (Tm), Ytterbium (Yb), and Yttrium (Y).
- Recycled materials
- Rosin, colophony (a.k.a. colophonium) and substances derived thereof
- Semicarbazide
- Silicones, silicone oils, siloxanes
- Substances (above the mentioned concentration levels) as listed in the Global Automotive Declarable Substance List (GADSL) reference list, version V1.0, February 1st, 2021
- Substances (above limit values applying to Product class I) as listed in Annex 4 of the OEKO-TEX® Standard 100, Edition 01.2021
- "Substances causing allergies or intolerances" as listed in Annex II of Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers. These include: Cereals, Crustaceans, Eggs, Fish, Peanuts, Soybeans, Milk, Nuts, Celery, Mustard, Sesame seeds, Sulphur dioxide and sulphites, Lupin and Molluscs
- Substances classified as CMR (all categories) according to the Regulation (EC) 1272/2008 on the 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
- Substances on the OSPAR List of Chemicals for Priority Action (Revised 2013)
- "Substances prohibited in cosmetic products" as listed in Annex II or "Substances which cosmetic products must not contain except subject to the restrictions laid down" as listed in Annex III of EU Regulation (EC) No 1223/2009/EC on cosmetic products (last amendment: (EU) 2021/1099 of 5 July 2021).
- Substances that could potentially be converted into nitrosamine compounds (nitrosatable substances) in any of the manufacturing steps and applied process conditions.

- Substances classified as Persistent, Bioaccumulative, and Toxic (PBT) Chemicals under Toxic Substances Control Act (TSCA), Section 6(h), as amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, including those issued by the US EPA via five final rules on January 6, 2021:
  - Decabromodiphenyl ether (DecaBDE) CASRN 1163-19-5
  - Phenol, isopropylated phosphate (3:1) [PIP (3:1)] CASRN 68937-41-7
  - Pentachlorothiophenol (PCTP) CASRN 133-49-3
  - Hexachlorobutadiene (HCBD) CASRN 87-68-3
  - 2,4,6-tris(tert-butyl) phenol, (2,4,6-TTBP) CASRN 732-26-3
- Thiurams
- Titanium acetylacetonate (TAA)
- Triaryl phosphites, Triclosan, Triclocarban
- Triethyl amine
- 2,2,4-Trimethyl-1,3-pentanediol diisobutyrate (TXIB)
- Tris(nonylphenyl, branched and linear) phosphite (TNPP)
- Vinyl Chloride Monomer (VCM)
- Volatile Organic Compounds in a concentration exceeding the limit (3%) of the Swiss regulation SR 814.018: "Verordnung über die Lenkungsabgabe auf Flüchtigen Organischen Verbindungen (VOCV)" of November 12th 1997
- Xylene

Version: September 23, 2021

Regarding the presence of halogens in **SABIC® LDPE 2100N0W - 00900** we can inform you that according to the recipe in the production the following substances as such are not intentionally used or added:

- Halogens (Bromine, Chlorine, Fluorine, Iodine, Astatine) or halogen compounds.

  SABIC® LDPE 2100N0W - 00900 is a "Halogen-Free" material according to the International Electrochemical Commission's (IEC) definition of Halogen-Free (IEC 61249-2-21).

Although the above-mentioned substance(s) as such is / are not intentionally added to this polymer grade, and the absence has not been checked by tests, this does not exclude the presence of negligibly slight traces due to, amongst others, impurities in the components supplied by external parties and used in the production of such components.

This declaration applies to the material as it leaves its production facilities. It does not cover any substance(s) or preparation(s) subsequently added and/or inexpert material processing or article fabrication further down in the supply chain.

Please note carefully that Regulations develop continuously and that SABIC declarations may be adapted accordingly. This declaration replaces all previous versions relating to this subject and product, and will be valid for a period of 3 (three) years, after which it will automatically expire.

If you have any further questions, or require any additional information on the above, please use the *"Contact Us"* form on the SABIC website. Select *"Regulatory"* as option under *"What is the nature of your inquiry"*. The form is available via https://www.sabic.com/en/contact.

Corporate Product Stewardship
Saudi Basic Industries Corporation

P.O. Box 5101
Riyadh 11422
Saudi Arabia

Europaboulevard 1
6135 LD Sittard
The Netherlands

2500 City West Blvd.
Houston, TX 77042
USA

2550 Xiupu Road
Pudong, Shanghai 201319
China

www.SABIC.com