Specialty Plasticizer

Oxofine™ Poly2K

Flexible solutions
for your business

Oxoplast™
flexible opportunities

Phthalate Free

Quality Polymeric

Grupa Azoty

Product Characteristics

Oxofine™ Poly2K is the first polymeric plasticizer in Segment Oxoplast™ portfolio. Oxofine™ Poly2K is a result of intensive research and development works in our Company. We produce it with the use of adipic acid. It is manufactured according to a proven technology which guarantees its highest quality and production stability.

Oxofine™ Poly2K:

- Very low migration and low volatility
- High durability and resistance to external conditions
- Extended finished product life span
- Low plasticizer viscosity
- Shorter plasticization time compared to other polymeric plasticizers
- Compatibility with the other
- plasticizers

Applications

Oxofine™ Poly2K is dedicated for plastic processing. It is a functional additive providing specific properties to finished products. However, it may be also used as primary plasticizer in certain applications. Oxofine™ Poly2K is recommended for:

Application tests

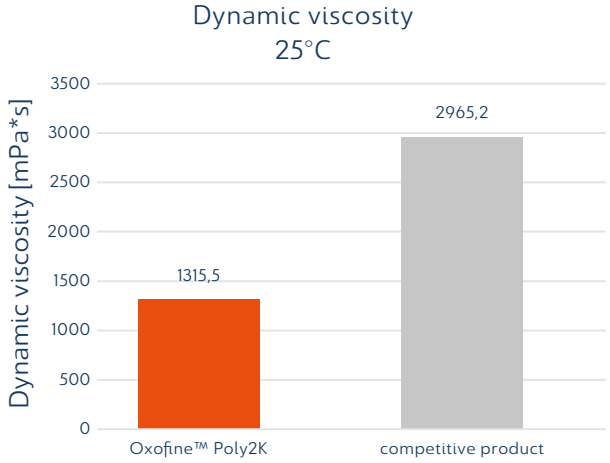
Our products undergo thorough application tests in our advanced and fully equipped **Laboratory of Research and Innovation Department**, in which we test plasticizer performance in polymer processing.

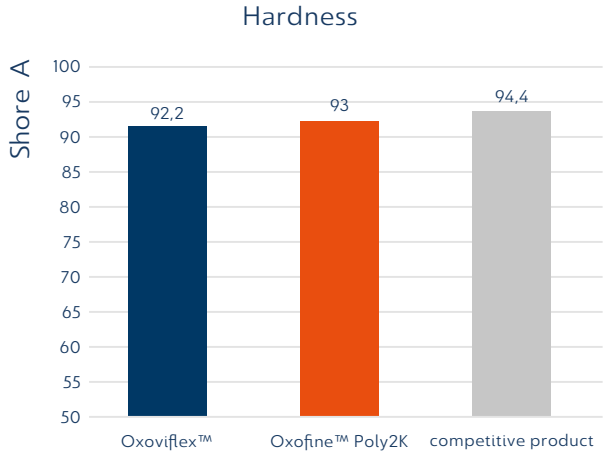
Viscosity

Oxofine™ Poly2K has low viscosity, which facilitates its dosing and shortens plasticization time. This feature provides energy savings in polymer processing.

Hardness

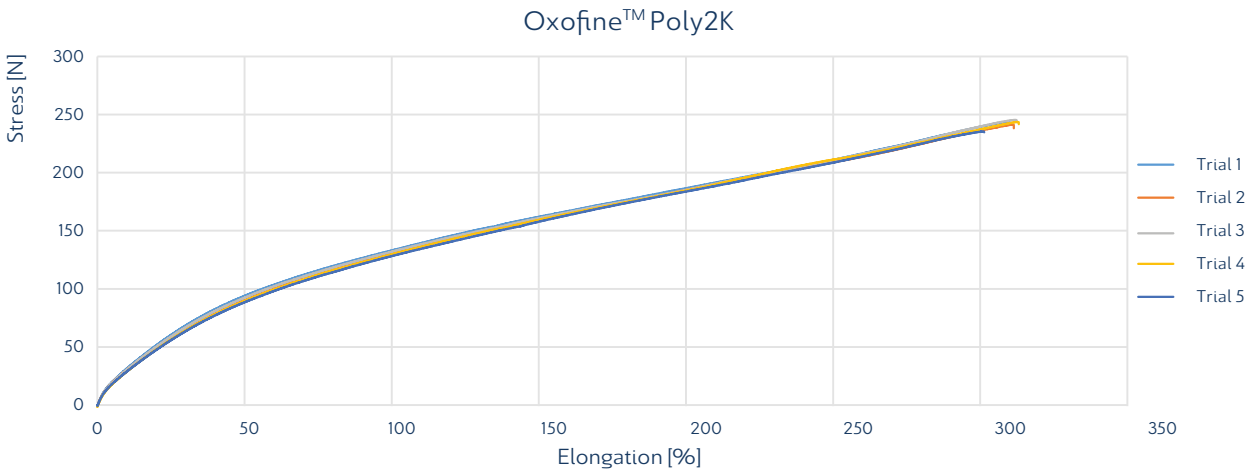
Products manufactured with Oxofine™ Poly2K have lower hardness and are comparable in this respect with goods produced using monomeric plasticizers.



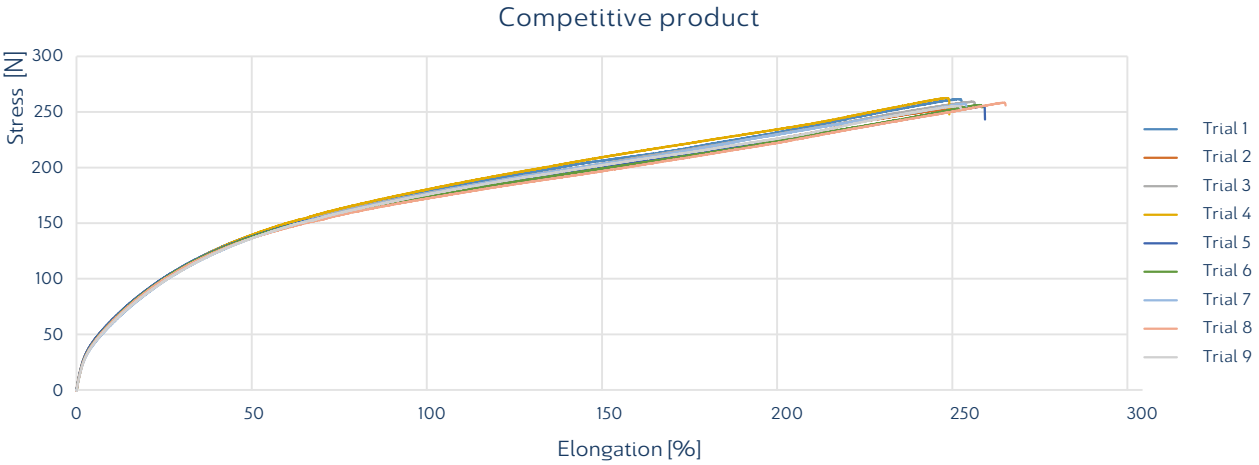


Strength parameters

Oxofine™ Poly2K provides high tensile strength and increases maximum elongation. The product is more flexible.



Series	Trial no.	L0	slow	Et	sx	sm	em	sb	eb	b	h
n = 9		mm	MPa	MPa	MPa	MPa	%	MPa	%	mm	mm
x	5	57,21	0,034	35,7	3,02	22,1	290	22,0	290	5,00	2,179
s	3	0,00	0,025	5,72	0,241	0,267	5,8	0,379	5,8	0,000	0,02472
υ [%]	54,77	0,00	73,64	16,01	7,96	1,20	2,01	1,72	2,01	0,00	1,13

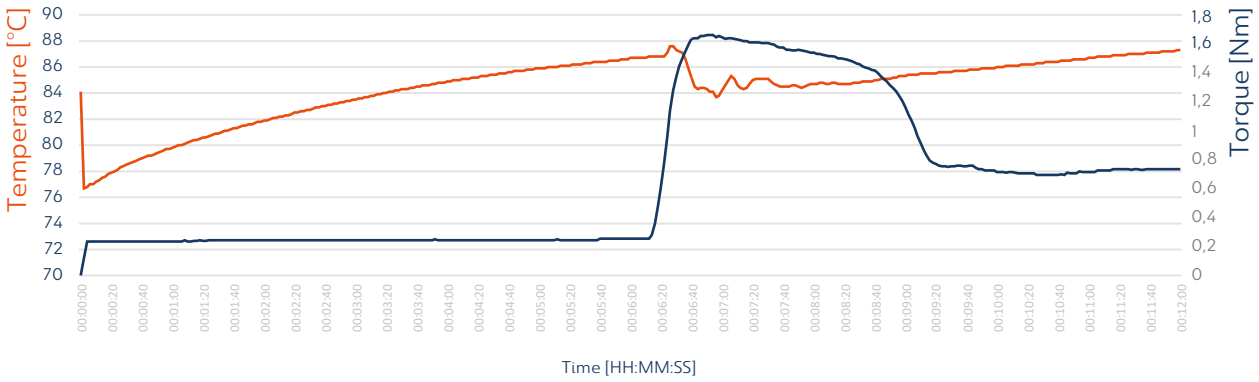


Series	Trial no.	L0	slow	Et	sx	sm	em	sb	eb	b	h
n = 9		mm	MPa	MPa	MPa	MPa	%	MPa	%	mm	mm
x	5	57,21	0,040	78,7	5,29	22,2	250	21,8	260	5	2,318
s	3	0,00	0,039	3,93	0,141	0,228	4,8	0,364	4,8	0,000	0,01856
υ [%]	54,77	0,00	–	5,00	2,67	1,03	1,89	1,67	1,87	0,00	0,80

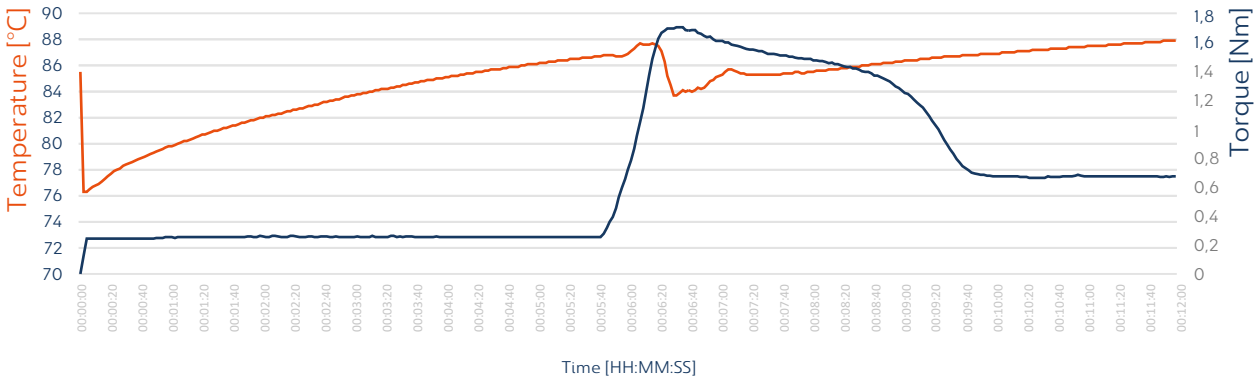
Plasticization time

Due to its high efficiency and favourable PVC grain penetration properties, compared to other polymeric plasticizers, Oxofine™ Poly2K shortens plasticization time and polymer processing.

Oxofine™ Poly2K
Plasticization time 2 min 40 s

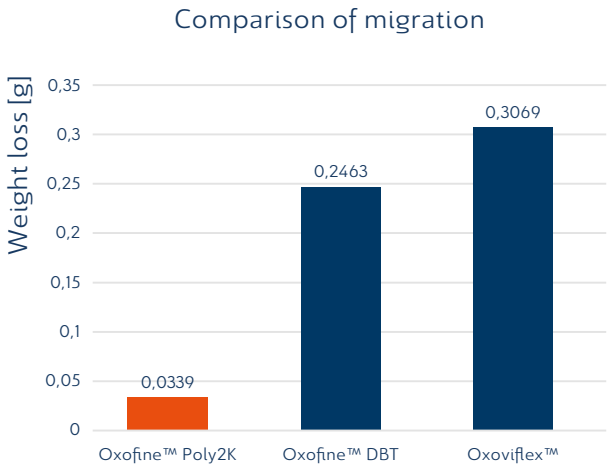


Competitive product
Plasticization time 3 min 30 s



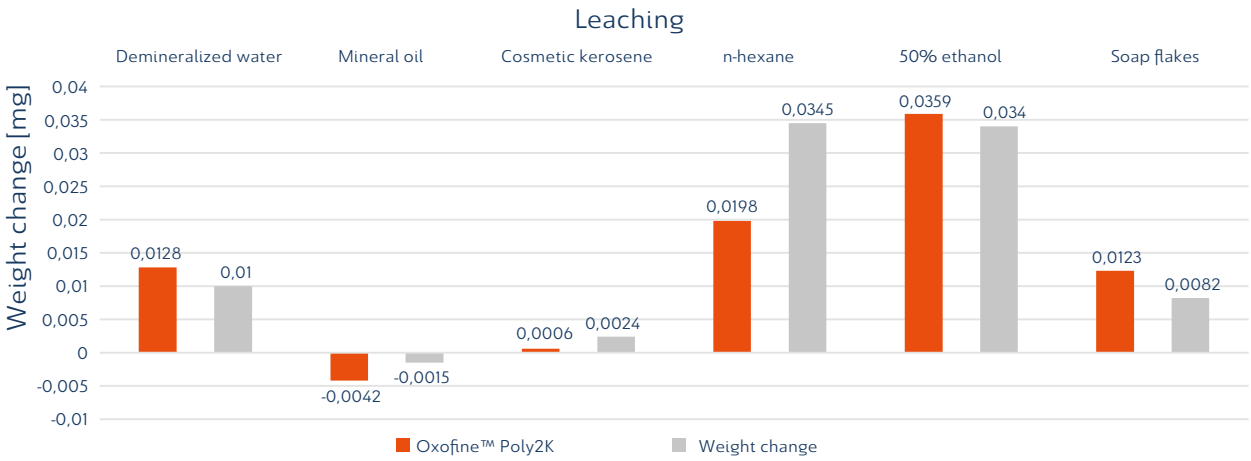
Migration

Oxofine™ Poly2K has a very low migration and low volatility. It provides the product with continuous softness and flexibility over long-term exposure to unfavourable external conditions.

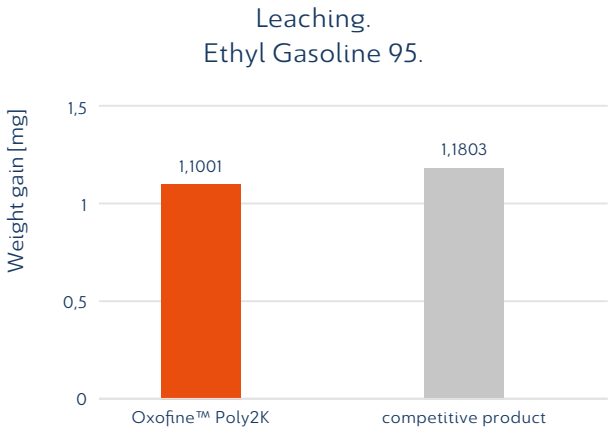


Resistance to extraction

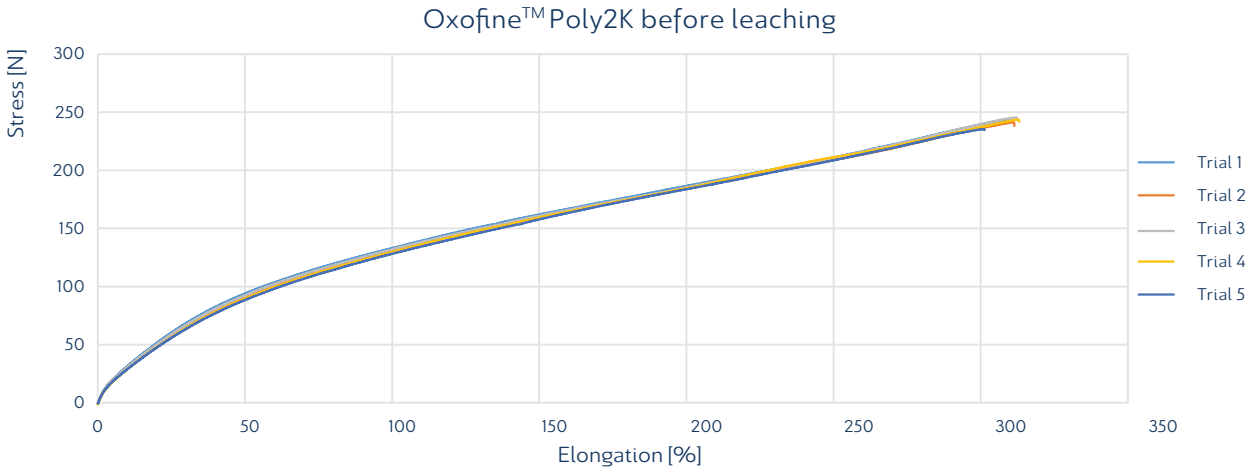
Oxofine™ Poly2K is resistant to extraction with water, oil, grease, petroleum and other chemicals. It has low leaching proprieties to other plastics, coatings and glues. Even long-term exposure to unfavourable conditions has no negative effect on the properties of finished product.



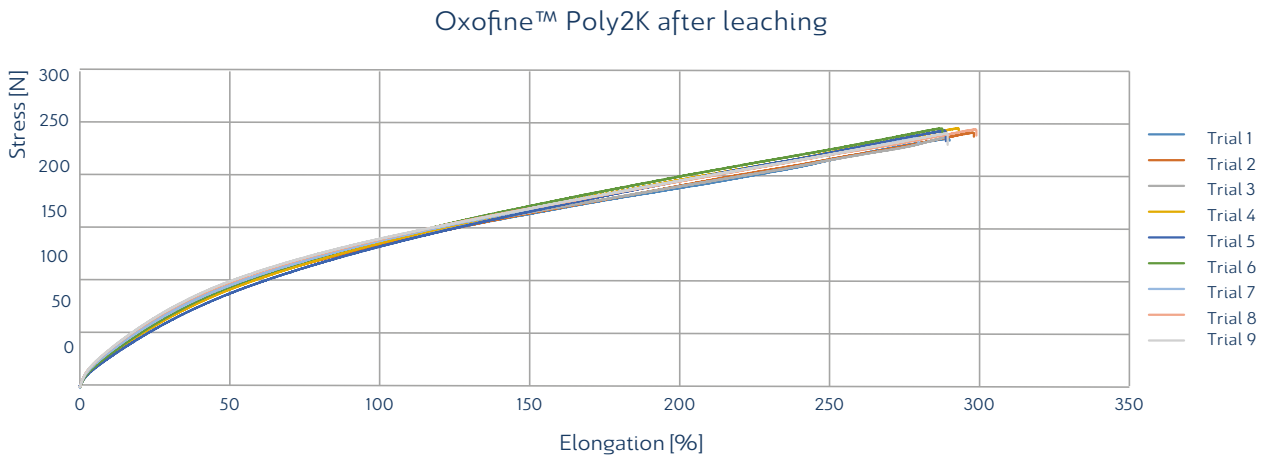
Resistance to Gasoline 95



Impact of Ethyl Gasoline 50 % on the Oxofine™ Poly2K-based product



Series	Trial no.	L0	slow	Et	sx	sm	em	sb	eb	b	h
n = 9		mm	MPa	MPa	MPa	MPa	%	MPa	%	mm	mm
x	5	57,21	0,034	35,7	3,02	22,1	290	22,0	290	5,00	2,179
s	3	0,00	0,025	5,72	0,241	0,267	5,8	0,379	5,8	0,000	0,02472
υ [%]	54,77	0,00	73,64	16,01	7,96	1,20	2,01	1,72	2,01	0,00	1,13



Series	Trial no.	L0	slow	Et	sx	sm	em	sb	eb	b	h
n = 5		mm	MPa	MPa	MPa	MPa	%	MPa	%	mm	mm
x	3	57,21	-0,017	33,8	2,81	22,0	300	22,0	300	5	2,152
s	2	0,00	0,038	1,92	0,189	0,499	2,8	0,499	2,8	0,000	0,01095
υ [%]	52,70	0,00	–	5,70	6,73	2,27	0,94	2,27	0,94	0,00	0,51

Specification

Physical and chemical properties

Item	Parameter		Value	Unit	Test method	Foreign equivalent
1	Colour	max.	500	[Pt-Co]	PN-EN ISO 6271:2016-01 PN-C-04534-01:1981	EN ISO 6271 ISO 2211
2	Viscosity at 20°C	min. max.	1500 2500	[mPa*s]	ASTM D7042 ISO 6721	ASTM D7042 ISO 6721
3	Viscosity at 25°C	min. max.	1250 1500	[mPa*s]	ASTM D7042 ISO 6721	ASTM D7042 ISO 6721
4	Acid value	max.	10	[mg KOH/g]	ASTM D1045 14	ASTM D1045 14
5	Refraction coefficient	min. max.	1.4670 1.4680	[]	ASTM D1218 DIN 51423-2	ASTM D1218 DIN 51423-2

Oxoplast™
flexible opportunities

Regulatory information

As the polymer substance, Oxofine™ Poly2K is excluded from mandatory REACH registration under Regulation (EC) No. 1907/2006. Due to its safe profile (not CLP classified) - it is not subject to authorisation, legal and application restrictions.

Commercial name:	Oxofine™ Poly2K
Chemical name:	The product is a polymeric compound produced on the basis of adipic acid, polyols and 2-ethylhexanol
CN:	3812 20 90
Polish Classification of Goods and Services (PCGS):	20.59.56.0

Sales and logistics:

We operate globally

IN-TIME deliveries in:

- IBC's
- drums
- road tankers
- ISO tanks
- flexitanks
- rail tankers

Proven logistics:

- land
- maritime
- intermodal

Customer support and product development

We provide technical and application support for all our plasticizers. We have well-qualified technical staff and the **Laboratory of Research and Innovation Department** equipped in the top quality and technically advanced equipped with the top, in which we conduct:

- Processing tests for:
  - DRY BLENDS processing parameters
  - Moulding parameters
- Laboratory tests:
  - Plasticization time
  - Shore Hardness
  - Strength parameters (tensile strength, elongation at break)
  - Thermal stability
  - Migration
  - Chemical resistance
  - GMC analysis
- Developing optimum processing formulations for industrial applications

We have also launched a semi-scale plasticizer (ester) production plant, on which our experienced technology engineers develop products with specific properties tailored to the individual needs and optimise the production technology.

The semi-scale enables production and synthesis of plasticizers and esters with specific properties in the tank and ion-exchange reactors.

In addition, we can conduct following processes:

- neutralization
- washing
- rectification
- drying with steam and nitrogen under reduced pressure.

We also cooperate with the scientific and research institutions, knowledge and experience of which supports our in-house competences and promotes development.

Contact

Grupa Azoty ZAK S.A.
ul. Mostowa 30 A
47-220 Kędzierzyn-Koźle
phone: +48 77 481 20 00
e-mail: oxoplast@grupaazoty.com

Oxoplast Business Unit
Commercial Director
Anna Gruszczyńska
phone: +48 77 481 25 53
e-mail: anna.gruszczynska@grupaazoty.com

Western Europe
Agnieszka Ciba
phone: +48 77 481 38 06
e-mail: agnieszka.ciba@grupaazoty.com

Poland
Jolanta Kamys
phone: +48 77 481 35 18
e-mail: jolanta.kamys@grupaazoty.com

Southern Europe, Asia, Africa
Katarzyna Łukasik
phone: +48 77 481 37 44
e-mail: katarzyna.lukasik@grupaazoty.com

North and South America
Sonia Droszczak
phone: +48 77 481 20 21
e-mail: sonia.droszczak@grupaazoty.com

Oxoplast™
flexible opportunities

Sales Representative
North America
Paweł (Paul) Bozek
phone: +1 905 980 0414
e-mail: pawel.bozek@grupaazoty.com

Purchasing Manager
Strategic Raw Materials
Anna Frankiewicz
phone: +48 77 481 21 90
e-mail: anna.frankiewicz@grupaazoty.com

Grupa Azoty ZAK S.A.
Mostowa 30A
47-220 Kędzierzyn-Koźle
Poland
Phone: +48 77 481 20 00
oxoplast@grupaazoty.com

www.oxoplast.com

10/2023