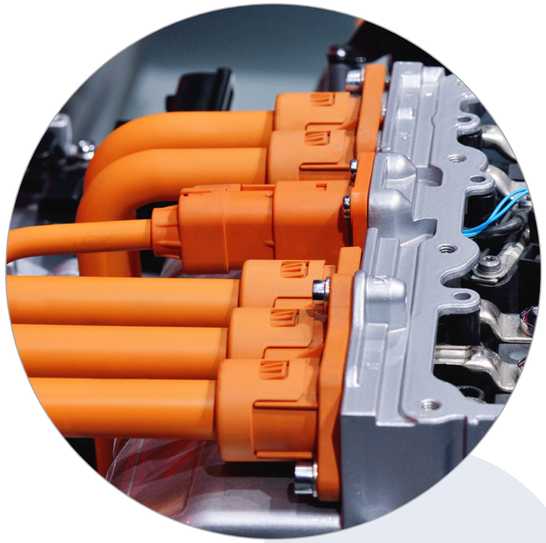


A Material Difference

Dryflex® TPV

Thermoplastic Vulcanisate Materials

HEXPOL® TPE

CONTENTS

Introduction

Dryflex TPV (Thermoplastic Vulcanisate) compounds are high performance materials **designed for demanding applications** where improved durability, heat or fluid resistance are required.

We've created several Dryflex TPV series to suit different applications, with **customised properties** including flow characteristics, hardness, specific gravity, strength and colour.

To enable the shift from virgin fossil feedstocks we have developed versions of our TPVs using **Recycled**, **Biobased** or Bio-Circular +/or Bio-attributed content according to the **Mass Balance** principle.

A Word About Customisation...

In this guide we show typical properties for our most common grades, these tables are not exhaustive and by no means list all available properties and materials. Our aim is to supply a material that precisely matches application requirements, and, where an existing grade cannot satisfy the specific demands of your application, we have the proven expertise to customise a material that will.

Please use this guide as an introduction to our **Dryflex TPVs** and contact us at **TPV@hexpolTPE.com** to discuss your requirements.

What are TPVs?

TPVs are compounds of **PP** and **EPDM rubber** which have been **dynamically vulcanised** during the compounding process.

The vulcanisation process changes the structure of the rubber making it more durable, improving its recovery to deformation and making it more resistant to ingress of aggressive fluids such as oils and solvents.

This process modifies the rubber phase by the creation of chemical cross-links, or bridges, between the individual rubber chains forming a network structure. Without this, the rubber chains move independently of each other allowing more permanent deformation to occur. This network structure also makes it more difficult for fluids to penetrate into and through the rubber chains.

They have seen strong growth in automotive seals, pipe seals, and other applications where a ***heat resistance of up to 135°C is required.*** Hardness values range typically from ***45 Shore A to 50 Shore D.*** TPVs also lend themselves to underbonnet automotive applications where improved temperature and oil resistance is required.

TPV or TPS?

Thermoplastic Vulcanisates (TPV) share many of the same characteristics as TPE compounds based on **Styrenic Block Copolymers (TPS)**, such as soft-touch appeal, flexibility, recyclability etc.

In certain applications, the higher thermal stability and chemical resistance of a TPV is not required and TPS based compounds will perform very well in these circumstances. Likewise, there are times when a TPS compound doesn't have the strength and durability for a demanding environment.

As HEXPOL TPE manufacture both TPS and TPV compounds, we can offer the best solution for each application, we won't over-specify when it is not needed.

Learn more about the different classes of TPEs at the TPE Academy >

Dryflex TPV : Key Properties

- A wide range of hardness’
- Service temperatures of -60°C to 135°C
- Improved resistance to aggressive fluids such as oils, acids, bases and aqueous solutions
- Low compression set
- Low flex fatigue
- Dryflex XL grades are easier to colour
- Lightweight parts
- Recyclable in closed-loop systems
- Grades for injection moulding, extrusion and blow moulding
- Excellent weathering and environmental resistance
- Adhesion to PP and PE in multi-component applications
- Versions with bio, recycled or bio-attributed +/or bio-circular content via the mass balance approach

Colour

Due to the cured elastomer phase, TPV compounds can be notoriously difficult to colour. The addition of separate colour masterbatch can also have an unexpected effect on the physical properties and functionality of the compound. The **Dryflex XL** series of TPV compounds have a ‘clean’ appearance, which makes them easier to colour. The **Dryflex V** series of TPV compounds are available in several pre-determined colours as well as black or natural. They are fully colour compounded, meaning fewer production steps for the processer and a consistent colour without any loss to properties or performance.

Hybrids & Semi-TPVs

It is also possible to produce hybrid materials based on TPVs that are combined with other TPE materials such as SEBS and/or only partially cross-link the rubber phase (sometimes referred to as a Semi-TPV). The main benefits of these are to expand the possibilities of material properties and therefore also its potential applications, alter the processing characteristics (viscosity) of the material, change the surface appearance and aesthetics of the final product and in some cases to improve economics.

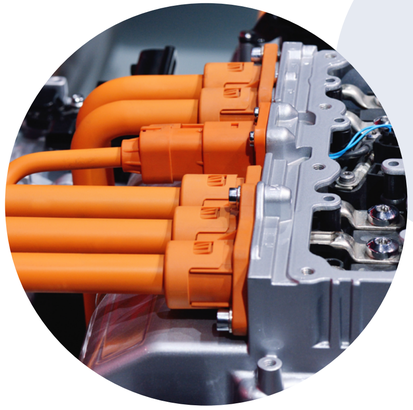
Haptics & Aesthetics

Dryflex TPV compounds are shear thinning and have excellent flow characteristics, helping to eliminate flow lines in complex or thin-walled parts. Dryflex TPV compounds are suitable for multi-component processing, with adhesion to olefinic polymers such as PP and PE, allowing for soft-touch areas and tactile surface finishes.

Typical Applications

TPV compounds are used extensively in a wide variety of markets and applications, these include:

- Automotive interior, exterior and underbonnet
- Electronics and appliances
- White goods
- Consumer goods
- Building and construction



Dryflex TPV Series Overview

Dryflex TPV Series	Easy to Colour	Oil Resistance	Heat Ageing	Requires Predrying	Processing	Link to Grade Table
Dryflex VE	✓	✓✓	✓✓	✓	Extrusion, Injection Moulding	→
Dryflex V	✓✓	✓	✓✓	✓	Extrusion, Injection Moulding	→
Dryflex XL 100, 200, 900	✓✓✓	✓	✓	✗	Injection Moulding	→
Dryflex TPV NBR Grades	✗	✓✓✓	✓	✗	Injection Moulding	→
Dryflex TPV HNBR Grades	✗	✓✓✓✓	✓✓✓	✗	Injection Moulding	→

Versions with Recycled and Biobased content and Mass Balance options available.

Dryflex VE Series

Designed for extrusion applications, for example automotive weatherseals and dynamic gaskets. The Dryflex VE series has improved oil resistance and heat ageing properties compared to the Dryflex XL grades. The grade references below are for black compounds, natural and coloured versions are also available.

Grade	Hardness[1] ISO 868 Shore A	Density ISO 2781 g/cm3	Tensile Strength[2] ISO 37 Type 1 MPa	Stress at 100% Strain[2] ISO 37 Type 1 MPa	Elongation at Break[2] ISO 37 Type 1 %	Tear Strength[2] ISO 34-1 Method C N/mm	CS 23°C / 24h ISO 815-1 Type B %	CS 70°C / 24h ISO 815-1 Type B %	CS 100°C / 24h ISO 815-1 Type B %
Dryflex VE 55A101	55	0.97	5.0	2.0	> 400	19.5	18.0	27.5	34.0
Dryflex VE 60A101	60	0.97	5.5	2.0	> 400	20.0	17.0	28.0	34.0
Dryflex VE 65A101	65	0.97	6.5	2.5	> 450	24.0	19.5	29.0	35.5
Dryflex VE 70A101	70	0.97	7.0	3.0	> 450	26.0	20.0	30.0	36.0
Dryflex VE 75A101	75	0.97	7.5	3.0	> 500	30.5	21.0	35.0	41.0
Dryflex VE 80A101	80	0.97	10.0	3.5	> 650	32.0	26.0	38.0	45.5

[1] After 15 seconds
[2] Across the flow direction

Dryflex V Series

General purpose TPV for extrusion, injection moulding & blow moulding. The Dryflex V series has improved oil resistance and heat ageing properties compared to the Dryflex XL grades. The references below are for black compounds, natural & coloured versions are also available.

Grade	Hardness[1] ISO 868 Shore A or D	Density ISO 2781 g/cm3	Tensile Strength[2] ISO 37 Type 1 MPa	Stress at 100% Strain[2] ISO 37 Type 1 MPa	Elongation at Break[2] ISO 37 Type 1 %	Tear Strength[2] ISO 34-1 Method C N/mm	CS 23°C / 24h ISO 815-1 Type B %	CS 70°C / 24h ISO 815-1 Type B %	CS 100°C / 24h ISO 815-1 Type B %
Dryflex V 45A101	45 A	0.94	4.0	1.0	> 550	13.0	18.0	29.0	34.0
Dryflex V 55A101	55 A	0.94	4.5	1.5	> 450	15.0	18.0	29.0	36.0
Dryflex V 60A101	60 A	0.93	5.5	2.0	> 500	19.0	20.0	30.0	37.0
Dryflex V 65A101	65 A	0.93	6.0	2.0	> 500	20.0	19.5	32.0	37.5
Dryflex V 70A101	70 A	0.95	7.0	2.5	> 550	22.0	22.5	37.0	44.5
Dryflex V 75A101	75 A	0.96	7.0	3.0	> 450	26.0	27.0	39.0	47.5
Dryflex V 80A101	80 A	0.97	8.0	3.5	> 600	32.0	31.0	41.0	48.0
Dryflex V 85A101	85 A	0.94	9.0	3.5	> 450	30.0	34.0	40.0	49.0
Dryflex V 90A101	90 A	0.94	10.0	4.5	> 550	44.0	38.0	48.0	52.0
Dryflex V 40D101	40 D	0.96	21.0	8.5	> 550	80.0	46.0	52.0	57.0
Dryflex V 45D101	45 D	0.94	21.0	10.0	> 650	87.0	51.0	54.0	62.0
Dryflex V 50D101	50 D	0.97	21.0	11.0	> 750	105.0	55.0	58.0	65.0

[1] After 15 seconds
[2] Across the flow direction

Dryflex XL 100 Series : High Flow

The Dryflex XL 100 series is designed for long or complex flow paths, which require a material with excellent flow properties. They can also be used for general moulding and are available as non-filled grades where easy colourability is required. The Dryflex XL 100 series also displays excellent bonding to polypropylene, EPDM and other olefinic polymers.

Grade	Hardness[1] ISO 868 Shore A	Density ISO 2781 g/cm3	Tensile Strength[2] ISO 37 Type 1 MPa	Stress at 100% Strain[2] ISO 37 Type 1 MPa	Elongation at Break[2] ISO 37 Type 1 %	Tear Strength[2] ISO 34-1 Method C N/mm	CS 23°C / 24h ISO 815-1 Type B %	CS 100°C / 24h ISO 815-1 Type B %
Dryflex XL 40100	40	0.91	2.0	1.0	> 350	12	17	40
Dryflex XL 50100	50	0.92	2.5	1.5	> 350	13	19	42
Dryflex XL 60100	60	0.92	4.0	2.0	> 350	19	23	43
Dryflex XL 70100	70	0.93	5.8	2.5	> 450	25	29	46
Dryflex XL 80100	80	0.93	6.9	3.4	> 500	32	32	50
Dryflex XL 90100	90	0.93	7.6	4.8	> 350	45	37	60

[1] After 15 seconds
[2] Average

Dryflex XL 200 Series : General Purpose

The Dryflex XL 200 series has been designed as a lower cost alternative to the Dryflex XL 100 series for injection moulding articles. these grades are very clean, easy to colour and also display very good bonding to polypropylene and olefinic polymers.

Grade	Hardness [1] ISO 868 Shore A	Density ISO 2781 g/cm3	Tensile Strength [2] ISO 37 Type 1 MPa	Stress at 100% Strain [2] ISO 37 Type 1 MPa	Elongation at Break [2] ISO 37 Type 1 %	Tear Strength [2] ISO 34-1 Method C N/mm	CS 23°C / 24h ISO 815-1 Type B %	CS 100°C / 24h ISO 815-1 Type B %
Dryflex XL 50200	50	0.88	2.6	1.7	> 150	11	20	37
Dryflex XL 60200	60	0.88	3.5	2.3	> 200	19	24	39
Dryflex XL 70200	70	0.89	5.0	3.8	> 150	26	26	40
Dryflex XL 80200	80	0.89	6.6	4.8	> 200	35	34	46
Dryflex XL 90200	90	0.89	10.0	7.8	> 250	64	38	60

[1] After 15 seconds
[2] Average

Dryflex XL 900 Series : Superior Strength

The Dryflex XL 900 series is our original range of TPVs. They have good all round properties giving a balance of compression set values against strength properties.

Grade	Hardness[1] ISO 868 Shore A	Density ISO 2781 g/cm3	Tensile Strength[2] ISO 37 Type 1 MPa	Stress at 100% Strain[2] ISO 37 Type 1 MPa	Elongation at Break[2] ISO 37 Type 1 %	Tear Strength[2] ISO 34-1 Method C N/mm	CS 23°C / 24h ISO 815-1 Type B %	CS 100°C / 24h ISO 815-1 Type B %
Dryflex XL 45900	45	0.95	3.1	1.4	> 300	12	15	39
Dryflex XL 55900	55	0.96	4.2	2.0	> 350	18	18	38
Dryflex XL 63900	63	0.96	5.3	2.5	> 400	22	20	40
Dryflex XL 68900	68	0.96	6.5	2.8	> 450	26	20	45
Dryflex XL 73901	73	0.97	7.6	3.2	> 450	32	23	45
Dryflex XL 80900	80	0.95	8.5	3.7	> 500	36	30	48
Dryflex XL 87900	87	0.96	8.7	5.0	> 450	44	35	55

[1] After 15 seconds
[2] Average

Dryflex TPV : NBR and HNBR Based Grades

Dryflex NBR based TPV trades some of the heat resistance of our V and VE range for even better oil and fuel resistance, but at a lower price point compared to HNBR based grades. They are an excellent choice for parts in contact with hydrocarbon fuels and oils at <100°C, for example under bonnet applications or industrial machinery and tools. **Dryflex HNBR based TPV** offer the highest performance in terms of heat ageing and oil resistance properties. Typical applications include automotive underbonnet parts or seals and gaskets that require improved ageing and resistance.

Grade	Technology	Hardness[1] ISO 868 Shore A	Density ISO 2781 g/cm3	Tensile Strength[2] ISO 37 Type 1 MPa	Elongation at Break[2] ISO 37 Type 1 %	Tear Strength[2] ISO 34-1 Method C N/mm	CS 23°C / 24h ISO 815-1 Type B %	CS 100°C / 24h ISO 815-1 Type B %
Dryflex 52495 XL	NBR	75	1.00	4.6	> 250	29.0	21	41
Dryflex XL 55A U0001-01 B	HNBR	55	1.07	4.2	> 250	21.3	23	51
Dryflex XL 60A U0002-01 B	HNBR	60	1.07	4.5	> 250	23.4	25	53
Dryflex XL 65A U0003-01 B	HNBR	65	1.08	6.3	> 250	29.0	25	61
Dryflex XL 70A U0004-01 B	HNBR	70	1.08	6.1	> 300	29.3	27	53
Dryflex XL 75A U0005-01 B	HNBR	75	1.09	8.2	> 300	36.3	28	54
Dryflex XL 80A U0006-01 B	HNBR	80	1.10	8.4	> 350	40.4	30	59
Dryflex XL 85A U0007-01 B	HNBR	85	1.11	8.5	> 300	46.1	33	60

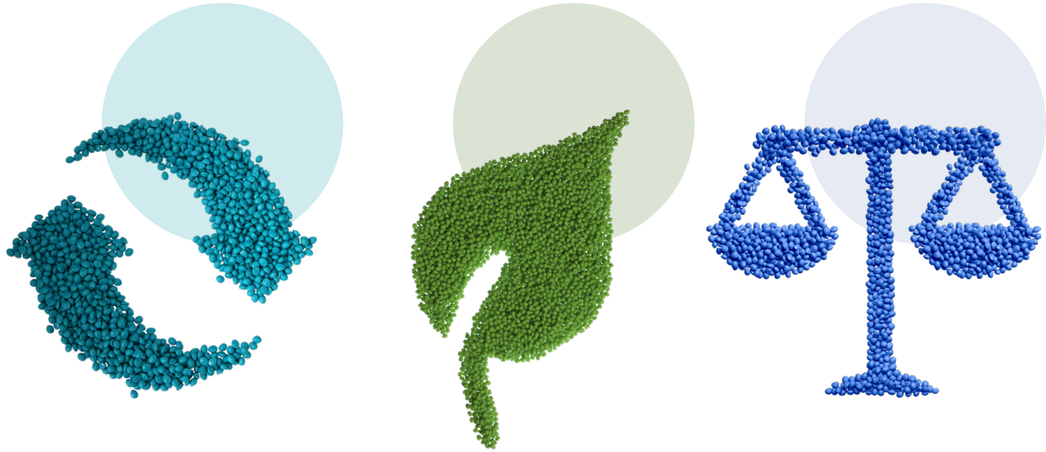
[1] After 15 seconds
[2] Across the flow direction

Sustainable Development

TPVs with Recycled, Bio or Content via the Mass Balance Approach

To enable the shift from virgin fossil feedstocks we have developed versions of our TPVs using **Recycled**, **Biobased** or circular +/or bio-attributed content according to the **Mass Balance** principle.

They can be used in many applications that currently use conventional TPVs. They display mechanical and physical properties comparable to TPV from fully fossil-based raw materials. They are a **drop-in solution** requiring no tool or mould modifications.



Read more about Sustainable Development at HEXPOL TPE >

Typical TPVs with Recycled Content

Dryflex Circular TPVs are available with amounts of recycled content up to 28%. The recyclate source is PCR (Post Consumer Recyclate), including recycled PP from end-of-life vehicles. Other sources include household plastic waste. Heat ageing, oil resistance and viscosity tests have been carried out. Dryflex Circular TPVs offer a broad service temperature range from -50 to +135 °C.

Grade	Hardness[1] ISO 868 Shore A	Density ISO 2781 g/cm3	Tensile Strength[2] ISO 37 Type 1 MPa	Stress at 100% Strain[2] ISO 37 Type 1 MPa	Elongation at Break[2] ISO 37 Type 1 %	Tear Strength[2] ISO 34-1 Method C N/mm	Compression Set 23°C / 24h ISO 815-1 Method B %	Compression Set 100°C / 24h ISO 815-1 Method B %	Recycled Content[3] %
Dryflex PCR V 75A211 B	75	0.98	5.4	3.2	> 350	29	27	44	21
Dryflex PCR V 82A281 B	82	0.96	6.8	3.4	> 500	33	33	48	28

[1] After 15 seconds
[2] Across the flow direction
[3] Calculation as defined in ISO 15343 section 4

Typical TPVs with Biobased Content

The Dryflex Green TPVs contain a percentage of raw materials from renewable resources such as plant and vegetable crops. Materials are available in hardnesses 65 to 85 Shore A with amounts of biobased content up to around 25% (ASTM D 6866).

Grade	Hardness[1] ISO 868 Shore A	Density ISO 2781 g/cm3	Tensile Strength ISO 37 Type 1 MPa	Stress at 100% Strain ISO 37 Type 1 MPa	Elongation at Break ISO 37 Type 1 %	Tear Strength ISO 34-1 Method C N/mm	Biobased Carbon Content ASTM D6866 % of TOC
Dryflex Green V 52227 B	65	0.89	4.2	2.8	> 200	22	25
Dryflex Green V 52323 B	68	0.89	7.6	3.0	> 300	28	24
Dryflex Green XL 52240 N	84	0.96	7.5	5.2	> 250	48	21

[1] After 15 seconds
[2] Across the flow direction

Product Testing + Performance

We understand the importance of durability, particularly when parts need to perform in demanding and high-stress environments.

We have engineered Dryflex TPV compounds to give **long term ageing resistance**; including **UV**, **ozone** and **weathering**.

We fingerprint and analyse our compounds to ensure consistency of our products and develop materials with superior performance.

Testing can include **Xenon-Arc accelerated weathering**, this simulates the damaging effects of long term outdoor exposure by exposing test samples to varying conditions of the most aggressive components of weathering - light, moisture and heat.

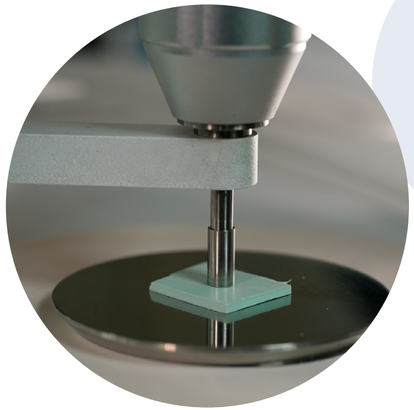


Figure 1 :
Compresion Set Behaviour of TPE + Elastomers

Dryflex TPV compounds offer long-term low compression set.

Shape retention is very good up to around 135°C.

Recovery to deformation at elevated temperatures is also good due to the ‘spring back’ properties of the vulcanised elastomer.

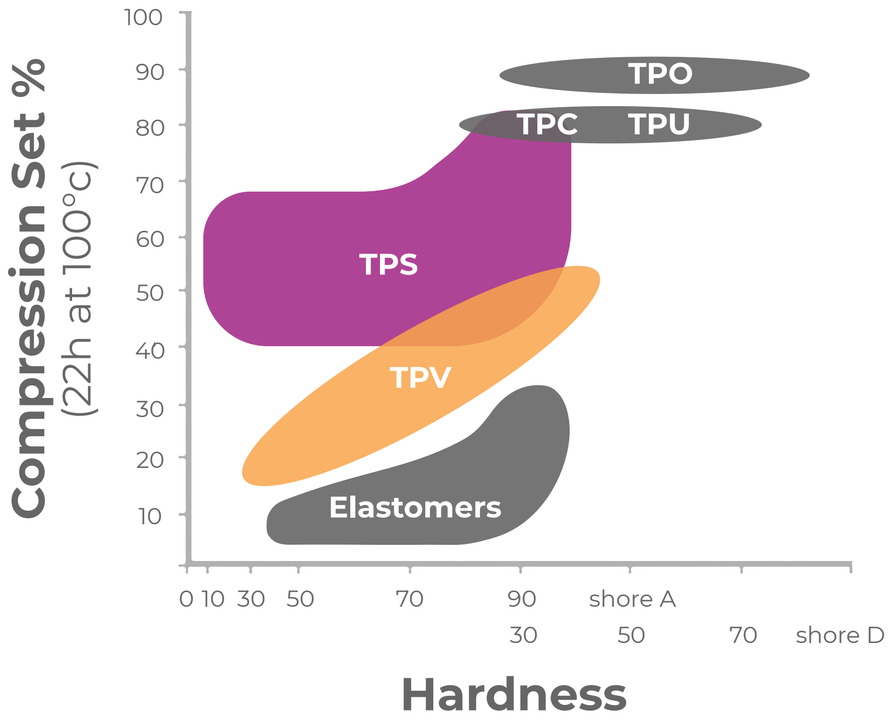
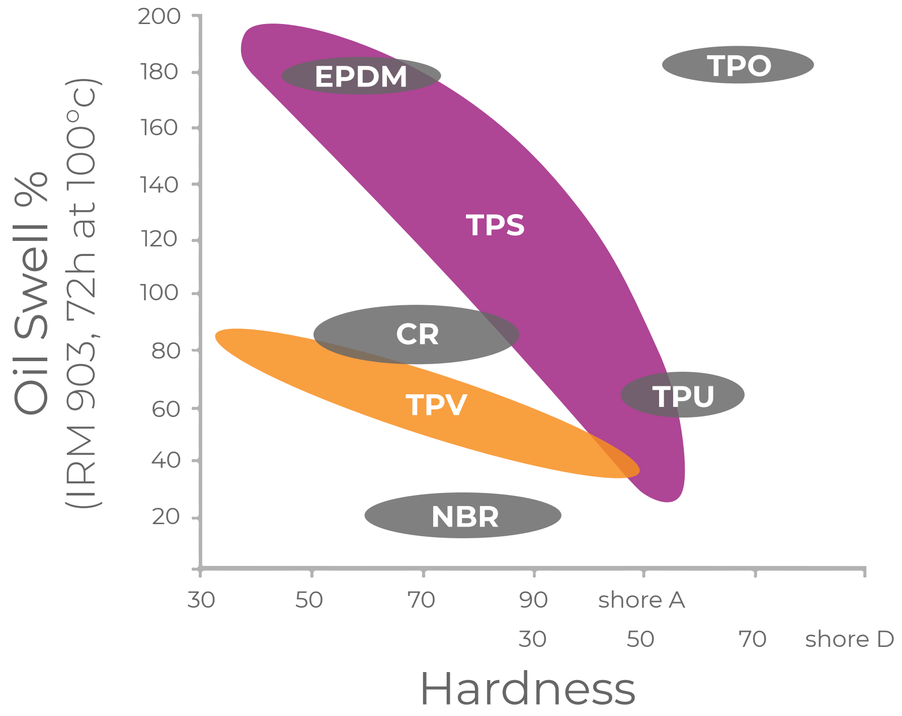


Figure 2 :
Influence of Oil on TPE + Elastomers

In terms of hydrocarbons and various oils, Dryflex TPVs display good resistance at ambient and elevated temperatures.

The chemically crosslinked network structure slows down and sometimes prevents penetration into the EPDM domains.



Oil Performance Comparison

Below you'll see a comparison on oil performance for some 75 Shore A Grades. Talk to us to discuss your specific requirements.

Grade	Technology	Hardness [1] ISO 868 Shore A	Density ISO 2781 g/cm3	Tensile Strength [2] ISO 37 Type 1 MPa	Elongation at Break [2] ISO 37 Type 1 %	CS 23°C / 24h ISO 815-1 Type B %	CS 100°C / 24h ISO 815-1 Type B %	Volume Swell ASTM D 471	Hardness Change [1] ISO 868 Shore A	Tensile Strength Change ISO Type 2 %	Elongation at Break Change ISO 37 Type 2 %	Oil Ageing Conditions
Dryflex VE 75A101	EPDM	75	0.97	7.5	> 500	21	41	99	-28	-47	-64	IRM 903 7 days 125°C
Dryflex 52495 XL	NBR	75	1.00	4.6	> 250	36	67	20	-20	-53	-72	IRM 903 7 days 125°C
Dryflex XL 75A U0005-01 B	HNBR	75	1.09	8.2	> 300	28	54	22	-9	-34	-26	IRM 903 7 days 150°C

[1] After 15 seconds
[2] Average

Dryflex VE Series :
Heat Ageing + Oil Resistance Performance

Grade	Hardness[1] Shore A ISO 868	HEAT AGED 150°C / 168h			IRM 901 125°C / 168h				IRM 903 125°C / 168h			
		Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Volume Swell ASTM D 471	Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Volume Swell ASTM D 471
Dryflex VE 55A101	55	-4	-10	-2	-21	-30	-53	54	-29	-49	-68	-109
Dryflex VE 60A101	60	2	5	4	-11	-28	-52	35	-27	-48	-68	84
Dryflex VE 65A101	65	3	6	4	-13	-26	-50	40	-28	-48	-65	90
Dryflex VE 70A101	70	5	9	-11	-16	-22	-49	44	-29	-48	-63	99
Dryflex VE 75A101	75	3	-3	-12	-13	-29	-46	44	-28	-47	-64	99
Dryflex VE 80A101	80	3	6	3	-15	-23	-44	42	-27	-48	-62	95

[1] After 15 seconds
[2] Across the flow direction

Dryflex V Series :
Heat Ageing + Oil Resistance Performance

Grade	Hardness[1] Shore A ISO 868	HEAT AGED 150°C / 168h			IRM 901 125°C / 168h				IRM 903 125°C / 168h			
		Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Volume Swell ASTM D 471	Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Volume Swell ASTM D 471
Dryflex V 55A101	55 A	4	4	-9	-19	-37	-54	50	-29	-49	-63	99
Dryflex V 60A101	60 A	4	3	-9	-14	-30	-55	40	-29	-49	-67	96
Dryflex V 65A101	65 A	5	1	-4	-20	-32	-55	48	-29	-49	-55	104
Dryflex V 70A101	70 A	2	6	-9	-18	-36	-50	51	-29	-48	-65	104
Dryflex V 75A101	75 A	1	1	7	-19	-34	-44	48	-28	-47	-54	103
Dryflex V 80A101	80 A	2	3	5	-22	-38	-63	77	-38	-56	-79	150

[1] After 15 seconds
[2] Across the flow direction

Dryflex TPV : HNBR Based Grades
Heat Ageing Performance

Grade	Hardness [1] Shore A ISO 868	HEAT AGED 150°C / 168h			HEAT AGED 150°C / 500h			HEAT AGED 150°C / 1000h			HEAT AGED 150°C / 2000h		
		Hardness Shore A Change ISO 868	Tensile Strength % Change [2] ISO 37	Elongation at Break % Change [2] ISO 37	Hardness Shore A Change ISO 868	Tensile Strength % Change [2] ISO 37	Elongation at Break % Change [2] ISO 37	Hardness Shore A Change ISO 868	Tensile Strength % Change [2] ISO 37	Elongation at Break % Change [2] ISO 37	Hardness Shore A Change ISO 868	Tensile Strength % Change [2] ISO 37	Elongation at Break % Change [2] ISO 37
Dryflex XL 55A U0001-01 B	55	-2	12	61	-2	38	74	2	33	17	18	135	-57
Dryflex XL 60A U0002-01 B	60	-1	7	73	-1	27	89	3	11	8	15	98	-57
Dryflex XL 65A U0003-01 B	65	-3	-19	68	0	-14	53	3	-21	4	14	16	-65
Dryflex XL 70A U0004-01 B	70	1	0	31	3	8	23	6	-11	-27	17	87	-72
Dryflex XL 75A U0005-01 B	75	2	-12	23	2	-30	-6	3	-22	-26	13	66	-48
Dryflex XL 80A U0006-01 B	80	0	-12	3	1	-31	-22	2	-23	-36	10	36	-81
Dryflex XL 85A U0007-01 B	85	2	-6	8	2	-16	-16	3	-25	-48	8	52	-78

[1] After 15 seconds
[2] Across the flow direction

Dryflex TPV : HNBR Based Grades
Oil Resistance Performance

Grade	Hardness[1] Shore A ISO 868	IRM 903 150°C / 168h				IRM 903 150°C / 500h				IRM 903 150°C / 1000h				IRM 903 150°C / 2000h			
		Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Volume Swell ASTM D 471	Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Volume Swell ASTM D 471	Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Volume Swell ASTM D 471	Hardness Shore A Change ISO 868	Tensile Strength % Change[2] ISO 37	Elongation at Break % Change[2] ISO 37	Volume Swell ASTM D 471
Dryflex XL 55A U0001-01 B	55	-13	-29	-19	22	-12	-45	-25	24	-14	-45	-23	26	-14	-57	-41	32
Dryflex XL 60A U0002-01 B	60	-11	-20	-4	21	-11	-44	-21	20	-15	-42	-9	23	-15	-53	-28	29
Dryflex XL 65A U0003-01 B	65	-13	-43	-23	18	-14	-56	-33	23	-17	-63	-39	23	-16	-73	-64	33
Dryflex XL 70A U0004-01 B	70	-7	-26	-28	16	-8	-44	-41	18	-10	-48	-45	22	-13	-61	-66	28
Dryflex XL 75A U0005-01 B	75	-9	-34	-26	22	-9	-49	-29	24	-12	-54	-39	27	-14	-66	-63	33
Dryflex XL 80A U0006-01 B	80	-9	-38	-45	21	-10	-46	-40	23	-14	-51	-47	25	-12	-63	-67	29
Dryflex XL 85A U0007-01 B	85	-7	-33	-41	20	-7	-46	-48	22	-10	-51	-56	25	-11	-56	-66	30

[1] After 15 seconds
[2] Across the flow direction

Processing

Dryflex TPVs are easily processed on standard thermoplastics equipment. They require no vulcanisation and are recyclable in closed-loop systems. We have grades for extrusion, injection moulding, blow moulding or thermoforming. This processing information is intended only as a guide. The actual parameters will depend on the machine used and the moulding being produced.

Predrying

The ***Dryflex XL*** and ***HNBR*** grades are not hydroscopic, so in general no predrying is required, however, after periods of prolonged storage predrying may be necessary. The ***Dryflex V*** and ***Dryflex VE*** grades are slightly hydroscopic, we recommend predrying for 3 hours at 80°C.

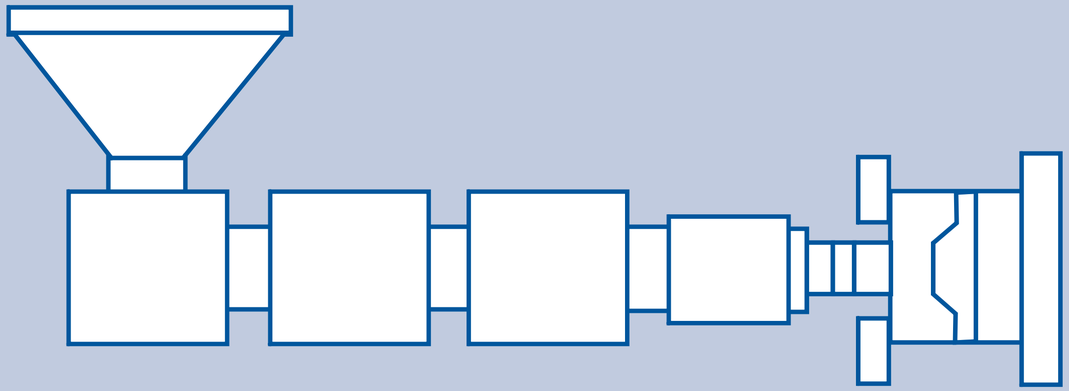
Cycle Times & Cooling

Cycle times will be governed by temperature and section thickness. Care must be taken to allow sufficient cooling of the section prior to demoulding in order to prevent permanent distortion of the article. Always ensure adequate extraction is available to remove any fumes which may be generated during processing.

More Processing + Problem Solving Information >

Injection Moulding Guidelines

Gates & Runners:	**Fully rounded allowing easy flow**
Venting:	**0.02 - 0.05 mm deep at final fill point**
Injection Speed:	**Medium - Fast**
Injection Pressure:	**Medium**
Back Pressure:	**Low - Medium**
Holding Pressure:	**Sufficient to pack the mould**
Cooling:	**Can be demoulded when parts have cooled sufficiently**

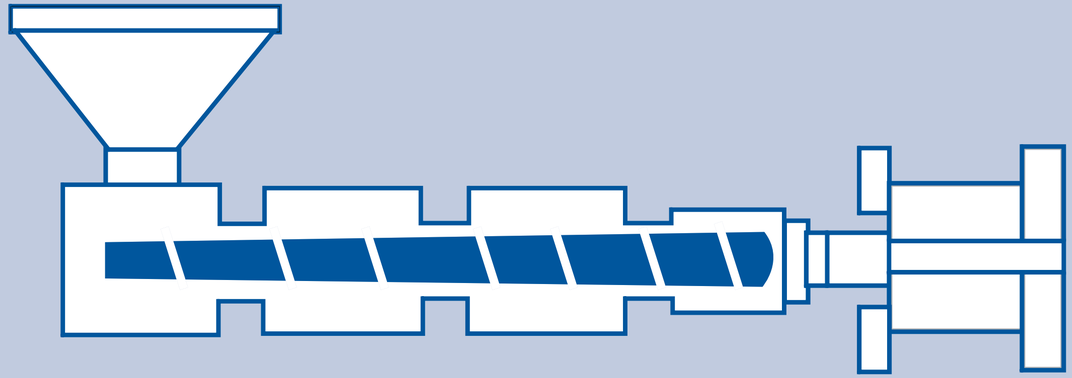


Recommended start-up temperatures °C

Dryflex V and VE series	**160 - 190**	**170 - 200**	**180 - 210**	**190 - 220**	**15 - 50**
Dryflex XL 100 series	**160 - 180**	**170 - 190**	**180 - 200**	**180 - 210**	**20 - 60**
Dryflex XL 200 series	**160 - 190**	**170 - 200**	**180 - 210**	**200 - 220**	**20 - 60**
Dryflex XL 900 series	**160 - 190**	**170 - 200**	**180 - 210**	**200 - 220**	**20 - 60**
Dryflex HNBR grades	**170 - 190**	**180 - 200**	**190 - 210**	**200 - 220**	**20 - 60**

Extrusion Guidelines

L/D Ratio:	**20:1 - 25:1**
Compression Ratio:	**2.5 - 3.5**
Breaker Plate/Screen:	**Both should be used**
Draw Down:	**5 - 10%**
Cooling:	**Cold water bath**



Recommended start-up temperatures °C	**Dryflex V and VE series**	**150 - 160**	**160 - 170**	**170 - 180**	**180 - 190**	**180 - 200**

More Dryflex TPE Ranges

Click for more information

Dryflex® 2K

Dryflex® AM

Dryflex® C

Dryflex® Cable

Dryflex® Circular

Dryflex® CS

Dryflex® DW

Dryflex® Flam

Dryflex® Green

Dryflex® HiF

Dryflex® Interior

Dryflex® PS

Dryflex® T

Dryflex® Touch

Dryflex® TPU

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