

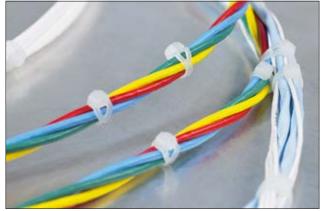
### Cable Ties with 90° angled head

#### **V-Series**

Due to its low profile head, V-Series outside serrated cable ties are perfectly suited for applications with restricted space, such as camera, alarm and automation systems (Remote I/O Systems). Where bundles are fed through a grommet or ductwork, V-Series provides a practical solution due to its unique rounded design.

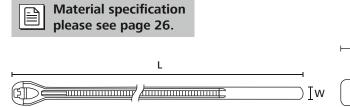
#### Features and benefits

- Outside serrated cable tie with smooth surface to the bundle
- The 90° angled head perfectly fits onto the bundle
- Rounded head design minimises the risk of damage to insulation, especially of parallel routed bundles
- Low profile head takes up less space above the bundle
- Easy insertion and high tensile strength
- Easy application either manually or with a processing tool



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V-Series is perfect for parallel bundles.



V-Series

ТҮРЕ	Width (W)	Length (L)	Bundle Ø max.	S N	Material	Colour	Pack Cont.	Tools	Article-No.
V100R	2.5	102.5	20.0	100	PA46	Grey (GY)	1,000 pcs.	2;4-6	118-00109
	2.5	102.5	20.0	100	PA66HS	Natural (NA)	1,000 pcs.	2;4-6	118-00074
V150R	3.3	150.0	35.0	150	PA46	Grey (GY)	100 pcs.	2;4-6;8	118-00107
	3.3	150.0	35.0	150	PA66HS	Natural (NA)	100 pcs.	2;4-6;8	118-00089

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Rec	Recommended Tools								
	2	4	5	6	8				
	MK20	MK3SP	MK3PNSP2	EVO7	MK7P				
	551	552	552	554	556				

For more information on toolings please refer to the Application Tooling chapter.

## **Material Specification Overview**

MATERIAL	Material Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	Material Specifications
Aluminium-alloy	AL	-40 °C to +180 °C	Natural (NA)		<ul><li>Corrosion resistant</li><li>Antimagnetic</li></ul>	RoHS
Chloroprene	CR	-20 °C to +80 °C	Black (BK)		<ul><li>Weather-resistant</li><li>High yield strength</li></ul>	RoHS
Ethylene Tetrafluoroethylene (Tefzel <sup>®</sup> )	E/TFE	-80 °C to +170 °C	Blue (BU)	UL 94 V0	<ul> <li>Resistance to radioactivity</li> <li>UV- resistant, not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	RoHS
Polyacetal	POM	-40 °C to +90 °C, (+110 °C, 500 h)	Natural (NA)	UL 94 HB	<ul> <li>Limited brittleness sensitivity</li> <li>Flexible at low temperature</li> <li>Not moisture sensitive</li> <li>Robust on impacts</li> </ul>	RoHS
Polyamide 11	PA11	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL 94 HB	<ul> <li>Bio-plastic, derived from vegetable oil</li> <li>Strong impact resistance at low temperature</li> <li>Very low moisture absorption</li> <li>Weather-resistant</li> <li>Good chemical resistanc</li> </ul>	HF RoHS
Polyamide 12	PA12	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL 94 HB	<ul> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> <li>UV- resistant</li> </ul>	HF RoHS
Polyamide 4.6	PA46	-40 °C to +150 °C (5000 h), +195 °C (500 h)	Natural (NA), Grey (GY)	UL 94 V2	<ul> <li>Resistance to high temperatures</li> <li>Very moisture sensitive</li> <li>Low smoke sensitiv</li> </ul>	HF LFH RoHS
Polyamide 6	PA6	-40 °C to +80 °C	Black (BK)	UL 94 V2	• High yield strength	RoHS
Polyamide 6, high impact modified	PA6HIR	-40 °C to +80 °C	Black (BK)	UL 94 HB	<ul> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	RoHS
Polyamide 6.6	PA66	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK), Natural (NA)	UL 94 V2	High yield strength	HF RoHS
Polyamide 6.6, glass-fibre reinforced	PA66GF13, PA66GF15	-40 °C to +105 °C	Black (BK)	UL 94 HB	<ul> <li>Good resistance to: lubricants, vehicle fuel, salt water and a lot of solvent</li> </ul>	HF RoHS
Polyamide 6.6, heat and UV stabilised	PA66HSW	-40 °C to +105 °C	Black (BK)	UL 94 V2	<ul> <li>High yield strength</li> <li>Modified elevated max. temperature</li> <li>UV-resistant</li> </ul>	HF RoHS
Polyamide 6.6, heat stabilised	PA66HS	-40 °C to +105 °C	Black (BK), Natural (NA)	UL 94 V2	<ul> <li>High yield strength</li> <li>Modified elevated max. temperature</li> </ul>	HF RoHS
Polyamide 6.6, high impact modified	PA66HIR	-40 °C to +80 °C, (+105 °C, 500 h)	Black (BK)	UL 94 HB	<ul> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	RoHS
Polyamide 6.6, high impact modified, heat and UV stabilised	PA66HIRHSW	-40 °C to +110 °C	Black (BK)	UL 94 HB	<ul> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> <li>High yield strength, UV-resistant</li> </ul>	RoHS
Polyamide 6.6, high impact modified, heat stabilised	PA66HIRHS	-40 °C to +105 °C	Black (BK)	UL 94 HB	<ul> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> </ul>	RoHS
<b>Polyamide 6.6,</b> high impact modified, ScanBlack	PA66HIR(S)	-40 °C to +80 °C, (+105 °C, 500 h)	Black (BK)	UL 94 HB	<ul> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	RoHS
<b>Polyamide 6.6,</b> UV-resistant	PA66W	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL 94 V2	<ul> <li>High yield strength</li> <li>UV-resistant</li> </ul>	HF RoHS

# Cable Ties and Fixings

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MATERIAL	Material Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	Material Specifications
<b>Polyamide 6.6,</b> with metal particles	PA66MP	-40 °C to +85 °C, (+105 °C, 500 h)	Blue (BU)	UL 94 HB	<ul> <li>High yield strength</li> <li>Metal and X-Ray detectable</li> </ul>	HF RoHS
<b>Polyamide 6.6,</b> with metal particles	PA66MP+	-40 °C to +85 °C	Blue (BU)	not flame retardant	<ul> <li>High yield strength</li> <li>Metal and x-ray detectable</li> </ul>	HF RoHS
Polyamide 6.6 V0	PA66V0	-40 °C to +85 °C	White (WH)	UL 94 V0	<ul><li>High yield strength</li><li>Low smoke emission</li></ul>	HF LFH RoHS
Polyester	SP	-50 °C to +150 °C	Black (BK)	halogen free	<ul> <li>UV-resistant</li> <li>Good chemical resistance to: most acids, alkaliks and oils</li> </ul>	HF LFH RoHS
Polyetheretherketone	PEEK	-55 °C to +240 °C	Beige (BGE)	UL 94 V0	<ul> <li>Resistance to radioactivity</li> <li>Not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	HF LFH RoHS
Polyethylene	PE	-40 °C to +50 °C	Black (BK), Grey (GY)	UL 94 HB	<ul> <li>Low moisture absorption</li> <li>Good chemical oilsresistance to: most acids, alcohol and oils</li> </ul>	HF RoHS
Polyolefin	PO	-40 °C to +90 °C	Black (BK)	UL 94 V0	Low smoke emissions	HF LFH RoHS
Polypropylene	PP	-40 °C to +115 °C	Black (BK), Natural (NA)	UL 94 HB	<ul> <li>Floats in water</li> <li>Moderate yield strength</li> <li>Good chemical resistance to: organic acids</li> </ul>	HF RoHS
Polypropylene, Ethylene-Propylene- Dien-Terpolymere- rubber free of Nitrosamine	pp, epdm	-20 °C to +95 °C	Black (BK)	UL 94 HB	<ul> <li>Good resistance to high temperatures</li> <li>Good chemical and abrasion resistance</li> </ul>	HF RoHS
Polypropylene with metal particles	PPMP	-40 °C to +115 °C	Blue (BU)	UL 94 HB	<ul> <li>Metal and X-Ray detectable</li> <li>Heat resistant</li> <li>Moderate yield strength</li> <li>Good chemical resistance</li> </ul>	RoHS
Polypropylene with metal particles	PPMP+	-40 °C to +85 °C	Blue (BU)	not flame retardant	<ul> <li>High yield strength</li> <li>Metal and x-ray detectable</li> </ul>	HF RoHS
Polyvinylchloride	PVC	-10 °C to +70 °C	Black (BK), Natural (NA)	UL 94 V0	<ul> <li>Low moisture absorption</li> <li>Good chemical resistance to: acids, ethanol and oil</li> </ul>	RoHS
Stainless Steel	SS304, SS316	-80 °C to +538 °C	Natural (NA)	non-burning	<ul> <li>Corrosion resistant</li> <li>Antimagnetic</li> <li>Weather resistant</li> <li>Outstanding chemical resistance</li> </ul>	HF LFH RoHS
Thermoplastic Polyurethane	TPU	-40 °C to +85 °C	Black (BK)	UL 94 HB	<ul> <li>High elastic</li> <li>Good chemical resistance to: acids, bases and oxidizing agents</li> </ul>	HF RoHS

Tefzel<sup>®</sup> is a registered trademark of DuPont. General linguistic usage for cable ties made from raw material E/TFE is Tefzel<sup>®</sup>-Tie. In additon to Tefzel<sup>®</sup> from DuPont HellermannTyton is also using equivalent E/TFE raw material from other suppliers. \*These details are only rough guide values. They should not be regarded as a material specification and are no substitute for a suitability test. Please see our datasheets for further details.

\*\*More colours on request.

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= Minimum Loop Tensile Strength for Cable Ties (Newton)

HF = Halogenfree

LFH = Limited Fire Hazard **RoHS = Restriction of Hazardous Substances** 

# **X-ON Electronics**

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