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Bonding properties of labels

The great variety places where adhesive labels can be used require a broad range of different materials and adhesives. The information given below will explain all the important aspects of this adhesion.

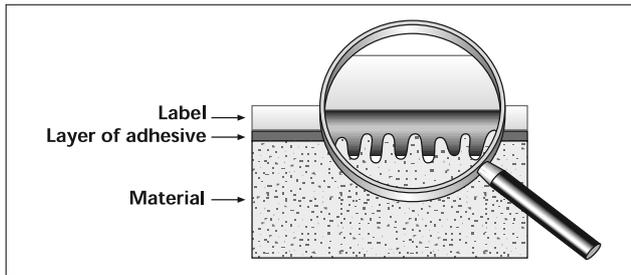
To enable you to make the right choice for your particular application quickly and efficiently, we have set out the most important selection criteria diagrammatically in our flowchart.

Initial and final bonding

In principle there are two different bonding conditions for labels: The initial bonding which occurs immediately after the label and surface are brought together and the final bonding which represents the permanent bonding status between label and surface following the application, pressing on and curing of the adhesive. The bonding of labels is measured in a defined test process (FINAT FTM) and stated in N/mm.

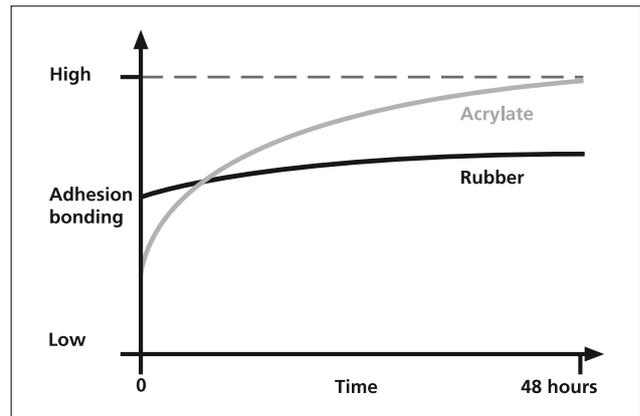
The initial bonding (or tack) describes the bonding ability of the label after it has been applied to the surface, without being pressed down.

The final bonding of labels is ultimately affected by the combined factors of material quality, adhesive basis, curing time, pressure applied and surface tension.



Adhesion: powers of attraction between two materials

Adhesion can be described, in principle, as the ability of the adhesive to form a bond with the substrate; the substrate is the surface of the material you need the label applied to. The influencing factors for optimum bonding are the quality of the material's surface and the creep ability of the adhesive. The crucial factor is the proportion of the surface which is actually to be 'wetted' by the adhesive. Most surfaces appear – from a microscopic point of view – like a mountain range with peaks and valleys; i.e. the effective surface is much bigger than that seen by the naked eye. No matter how smooth and flat a substrate may appear to be, there is always some roughness. The better the adhesive flows into the valleys, the more bonding points it can form and the better the adhesive will bond to the surface. A thicker layer of adhesive does allow these uneven areas to be filled in better, but a thicker coat of adhesive has negative effects when labels are processed by machine (e.g. leakage of the adhesive or limited storage life).



Adhesive basis

HellermannTyton currently uses acrylate and synthetic rubber as adhesive bases. Acrylate adhesives belong to the family of thermoplastic resins and at normal temperatures they provide high and lasting adhesion. When considering the final bonding of acrylate adhesives, however, it must be noted that the relatively high final bonding is only attained after a certain curing period. This is especially true of labelling materials which may be used for rating plates. Normally you must wait for at least 48 hours in a dry office environment.

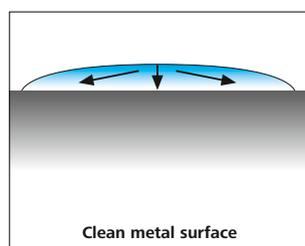
Synthetic rubber-based adhesives, unlike acrylate-based adhesives, are distinguished by their high initial bonding. But this adhesive technology does not achieve a final bonding comparable to acrylate adhesives (see graph). Special mixtures of synthetic rubber are used in labelling technology, for example for removable labels, e.g. HellermannTyton material type 270.



Effect of surface energy on bonding properties

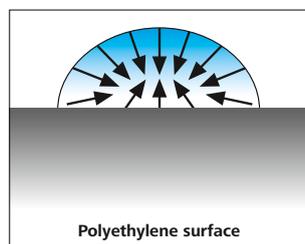
The surface energy (also known as surface tension) is an important factor in the selection of the right adhesive. Because of their chemical formulation, all surfaces have their own polarity and surface tension. The cause of surface tensions is the tendency of liquids to reduce their surface as far as possible, thus to form drops. When a surface which is to be marked (substrate) is wetted with an adhesive, in addition to the adhesive formulation and the surface quality (material, roughness, dampness etc.) the surface energy is also a decisive factor in the maximum attainable bonding force of the adhesive.

As a basic rule, it can be noted that the surface energy of the adhesive must be less than the surface energy of the material to be bonded (substrate). The adhesive should completely wet the substrate and not form any drops.



Flat drops

- High surface energy
- Good wetting
- Good bonding properties



Rounded drops

- Low surface energy
- Poor wetting
- Weak bonding properties

The material combination is the decisive factor

An acrylate-based adhesive is polar and therefore has a relatively high surface energy. Acrylate-based adhesives achieve optimum final bonding on polar substrates (e.g. glass or metals) with a high surface energy. More critical is the application of labels using acrylate-based adhesives on materials with low surface energy (apolar substrates) such as, for example, silicone, polyethylene and polypropylene. The surface tensions of an acrylate-based adhesive can be reduced for particular applications by the addition of specific additives. However, this step brings with it some drawbacks, for example, a free-flowing adhesive and thus a limited life and storage ability of the labels. The lower bonding force of low-energy surfaces must therefore be taken into account of when considering the end use. For optimum marking using acrylate-based adhesive labels, HellermannTyton uses an improved adhesive formulation, which is co-ordinated to the most common materials in industry. In most cases it is possible to guarantee very good application of these labels. In borderline cases, a modified adhesive formulation may be necessary. Talk to us, we'll be delighted to advise you.

Surface energies of different materials

MATERIAL	Surface energy [mN/m]*
Polytetrafluorethylene (PTFE)	18
Silicon (Si)	24
Polyvinyl fluoride (PVF)	25
Natural rubber (CR)	25
Polypropylene (PP)	29
Polyethylene (PE)	35
Polymethyl methacrylate, Acryl (PMMA)	36
Epoxy (EP)	36
Polyoxymethylene, Acetal (POM)	36
Polystyrene (PS)	38
Polyvinyl chloride (PVC)	39
Vinylidene chloride (VC)	40
Polyester (PET)	41
Polyimide (PI)	41
Polyarylsulfone (PAS)	41
Phenolic resin	42
Polyurethane (PUR)	43
Polyamide 6 (PA 6)	43
Polycarbonate (PC)	46
Lead (Pb)	450
Aluminium (Al)	840
Copper (Cu)	1100
Chromium (Cr)	2400
Iron (Fe)	2550

*The values stated are non-binding reference values and for guidance purposes only.

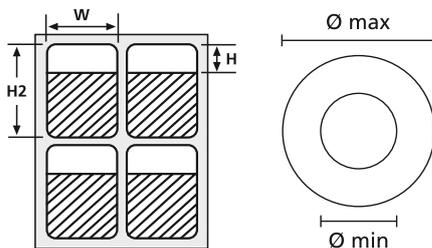
Instructions for using cable markers with protective laminate

Cable markers with protective laminate (also known as cable laminators) have a white or coloured label field which can be written on either manually using a marker pen (see RiteOn and HELASIGN) or using a matrix, laser or thermal transfer printer (see Helatag). Depending on the design for the respective type of printing, the title block has a special surface finish to achieve the optimum print anchorage to the label substrate. This results in long-lasting, clear, sharp writing with text, graphics or barcode. A special feature is that the HellermannTyton protective laminate comes with rounded corners. This achieves greater final adhesion of the protective laminate and counteracts any undesirable removal of the label, especially with cables of small diameter and in heavy-duty applications.

When calculating the minimum and maximum diameters, the following formula has been used:

$$\text{Diameter} = \frac{\text{Length of laminate}}{\pi}$$

Pi (π) is the constant 3.14.



Helatag self-laminating labels.

Minimum diameter:

To save time, when wrapping the cable with the cable laminator, a limit of max. 2 windings has been set. The protective laminate length is calculated from: Height H_2 – height H

By applying the “diameter” formula this produces the approx. minimum diameter:

$$\text{Diameter}_{\min} = \frac{H_2 - H}{2 \cdot \pi}$$

Example: TAG136LA4 ($H = 19.05$ mm; $H_2 = 67.7$ mm)

$$\text{Diameter}_{\min} = \frac{67.7 - 19.05}{2 \cdot 3.14}$$

Maximum diameter:

In this case the minimum requirement is complete coverage of the label field with the protective laminate with a single winding. The length of the protective laminate is again obtained from the formula: $H_2 - H$.

By applying the “diameter” formula this produces the approx. maximum diameter, which also corresponds to double the minimum diameter:

$$\text{Diameter}_{\max} = \frac{H_2 - H}{\pi} = 2 \cdot \text{Diameter}_{\min}$$

Example: TAG136LA4 ($H = 19.05$ mm; $H_2 = 67.7$ mm)

$$\text{Diameter}_{\max} = \frac{67.7 - 19.05}{3.14} = 2 \cdot \text{Diameter}_{\min}$$



Interesting facts about thermal transfer films (colour ribbons)

The thermal transfer ribbon is perhaps the most important consumable that is used in this printing system - using the right ribbon for a particular application is extremely important.

Not every transfer ribbon is equally suited to any purpose. Depending on the printing requirements (e.g. smudge or scratchproof) to be met, what type of labels will be used, an appropriate thermal transfer ribbon must be used.

Another important consideration for the thermal transfer ribbon is the electrostatic charging which can arise during the printing process. Some transfer ribbons become statically charged during the printing process, which can damage an ESD-sensitive printer head in the long run.

To clarify: The thermal transfer printer head is in physical contact with the back of the thermal transfer ribbon and consists solely of electronic, voltage-sensitive elements, which are known as dots.

These can become damaged when the thermal transfer ribbon causes discharges, which usually results in dot drop-outs. At points where the print head is damaged, no more colour is transferred. This leaves gaps on the label.

Thermal transfer films usually consist of three layers:

- A polyester strip as supporting material
- A protective, gliding backing layer on one side
- A colour layer on the other side.

The colour remains solid at room temperature, but liquefies under the effect of heat. To manufacture the colour ribbons, the polyester ribbon is coated with a special backing and then the respective coloured ink is applied. Print characteristics and bonding ability on various materials depend mainly on the chemical composition of this colour ink.

The main distinguishing feature of thermal transfer ribbons is the so-called quality of the coating. There are two basic types of thermal transfer ribbons:

Wax-resin-based films – good synthesis

With this quality of a wax-resin mixture, the good print characteristics of the wax are essentially retained, but the resin content increases mechanical strength. The print image produced has high resistance to heat, solvents, abrasion and scratching and high print quality, e.g. for barcodes. These colour ribbons are suitable for use on synthetic materials. They can be used for most applications at standard print temperatures.

- TT932DOUT
- TT822OUT8

Resin-based films – for very heavy-duty purposes

The colour layer at this quality level is based entirely on synthetic resins, developed for industrial applications and extreme conditions. Resin-based colour ribbons guarantee maximum readability, even on the most difficult materials (e.g. barcodes). Depending on the backing material, medium to high print temperatures and slow print speeds are necessary when using these thermal transfer films. In return, a print image is obtained which stands out for its high resistance to abrasion and scratching and great solvent and heat resistance.

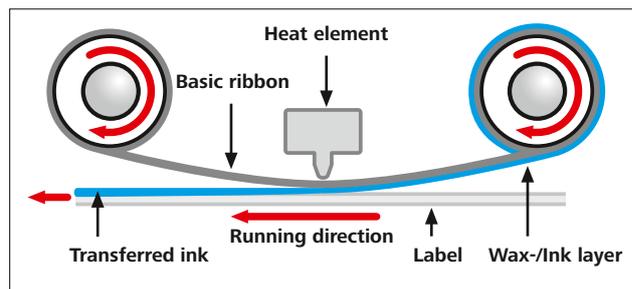
- TT822OUT
- TTRW
- TTDTHOUT
- TTRHT

Interesting facts about thermal transfer printing

Thermal transfer printing plays a central role, especially in the field of printing variable data, single-proofs and even for small series. This is largely due to the fact that thermal transfer printing is a non-impact printing (NIP) process. Unlike traditional printing processes, such as offset-printing, a NIP printing process does not require a fixed printing block and can therefore print out different data with consistent quality from print to print.

Due to the increasing spread and importance of one and two-dimensional barcodes in goods inventory systems, logistics and in the field of component identification, the market potential of thermal transfer printing is growing all the time. The same is also true of incremental serial numbers, inventory designations, entrance tickets, rating plates, wine labels and many more.

Good print quality, high print speeds and the option of printing almost all backing materials permanently – these are the critical advantages of thermal transfer printing. It's good readability, resistance and abrasion resistance allow thermal transfer printing to be put to use in applications where the print results from laser, inkjet or dot matrix printers are not satisfactory.



Heated dots strike a special colour ribbon, the thermal transfer film, which transfers liquefied colour ink at exactly that point onto the backing material (labels, tubes, rating plates). Our modern printers use what is known as "thin film technology", in which the very brief liquid phase of the ink produces faster print speeds and better and more precise images than with the "thick film technology" formerly used.

Moreover, the linear orientation of the labels or of the heatshrink tubing makes it possible to print on demand. The printing is then carried out as required. This is especially useful in the production of rating plates in series production.

In thermal transfer printing, the print image is defined by the three components: printer, label material and thermal transfer film (colour ribbon).

The advantages at a glance:

- High print quality with a resolution of 8-12 dots/mm (12 dots/mm corresponds to approx. 300 dpi)
- Barcode printing in excellent quality, hence good optical readability
- High print speeds of between 30mm/sec and 150mm/sec
- Individual graphics capability
- Problem free and rapid realisation of self designed drafts
- Quiet and service friendly printers
- Prints are UV fast and permanent with high definition and contrast and good resistance to mechanical and chemical influences.



Shrinkable markers "Continuous Tube", thermal transfer

TULT - 3:1 Military and Electronics

TULT is a UL recognized 3:1 heatshrink material supplied as a continuous tube and printable on both sides. The supplied accessories allow users to either perforate the tubing at pre-determined lengths (P4000), or fully sever the markers (S4000) whilst printing with the TrakMark DS or TT4000+ printer. Print with HellermannTyton's premium range of thermal printers and ribbons.

Printers: TrakMark DS, TT4000+ and TT430

Ribbons: TTRC+, TTDTHOUT, TTRW, TT822OUT8

Accessories for TrakMark DS and TT4000+: Perforator (P4000), Cutter (S4000)

Accessories for TT430: Cutter (S430), Perforator (P430)

Software: TagPrint Pro 3.0

Features and Benefits

- Shrink ratio 3:1
- Available in black, blue, red, white and yellow
- Cable range from 39 mm to 1 mm
- Good mechanical strength and resistance to organic solvents and chemicals
- Highly flexible
- Fulfils UL224 VW-1 and CSA requirements
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro 3.0



TULT – 5 colours of UL recognised printable tube to cover a wide range of diameters.

MATERIAL	Polyolefin, cross-linked (PO-X)
Operating Temperature	-55 °C to +135 °C
Minimum Shrink Temperature	+90 °C
Shrink Ratio	3:1
Recommended Ribbon Type	TTRC+, TTDTHOUT, TTRW, TT822OUT8
Specifications	CSA, UL-Recognised



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Pack Cont.	Colour	Article-No.
TULT3-1BK	3.0	1.0	0.60	176 m	Black (BK)	553-40300
TULT3-1BU	3.0	1.0	0.60	176 m	Blue (BU)	553-40306
TULT3-1RD	3.0	1.0	0.60	176 m	Red (RD)	553-40302
TULT3-1WH	3.0	1.0	0.60	176 m	White (WH)	553-40309
TULT3-1YE	3.0	1.0	0.60	176 m	Yellow (YE)	553-40304
TULT4.8-1.6BK	4.8	1.6	0.65	110 m	Black (BK)	553-40480
TULT4.8-1.6BU	4.8	1.6	0.65	110 m	Blue (BU)	553-40486
TULT4.8-1.6RD	4.8	1.6	0.65	110 m	Red (RD)	553-40482
TULT4.8-1.6WH	4.8	1.6	0.65	110 m	White (WH)	553-40489
TULT4.8-1.6YE	4.8	1.6	0.65	110 m	Yellow (YE)	553-40484
TULT6-2BK	6.0	2.0	0.70	110 m	Black (BK)	553-40600
TULT6-2BU	6.0	2.0	0.70	110 m	Blue (BU)	553-40606
TULT6-2RD	6.0	2.0	0.70	110 m	Red (RD)	553-40602

All dimensions in mm. Subject to technical changes.
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.



Shrinkable markers "Continuous Tube", thermal transfer

TULT - 3:1 Military and Electronics



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Pack Cont.	Colour	Article-No.
TULT6-2WH	6.0	2.0	0.70	110 m	White (WH)	553-40609
TULT6-2YE	6.0	2.0	0.70	110 m	Yellow (YE)	553-40604
TULT9-3BK	9.0	3.0	0.80	72 m	Black (BK)	553-40900
TULT9-3BU	9.0	3.0	0.80	72 m	Blue (BU)	553-40906
TULT9-3RD	9.0	3.0	0.80	72 m	Red (RD)	553-40902
TULT9-3WH	9.0	3.0	0.80	72 m	White (WH)	553-40909
TULT9-3YE	9.0	3.0	0.80	72 m	Yellow (YE)	553-40904
TULT12-4BK	12.0	4.0	0.85	54 m	Black (BK)	553-41200
TULT12-4BU	12.0	4.0	0.85	54 m	Blue (BU)	553-41206
TULT12-4RD	12.0	4.0	0.85	54 m	Red (RD)	553-41202
TULT12-4WH	12.0	4.0	0.85	54 m	White (WH)	553-41209
TULT12-4YE	12.0	4.0	0.85	54 m	Yellow (YE)	553-41204
TULT18-6BK	18.0	6.0	1.00	26 m	Black (BK)	553-41800
TULT18-6BU	18.0	6.0	1.00	26 m	Blue (BU)	553-41806
TULT18-6RD	18.0	6.0	1.00	26 m	Red (RD)	553-41802
TULT18-6WH	18.0	6.0	1.00	26 m	White (WH)	553-41809
TULT18-6YE	18.0	6.0	1.00	26 m	Yellow (YE)	553-41804
TULT24-8BK	24.0	8.0	1.20	26 m	Black (BK)	553-42400
TULT24-8BU	24.0	8.0	1.20	26 m	Blue (BU)	553-42406
TULT24-8RD	24.0	8.0	1.20	26 m	Red (RD)	553-42402
TULT24-8WH	24.0	8.0	1.20	26 m	White (WH)	553-42409
TULT24-8YE	24.0	8.0	1.20	26 m	Yellow (YE)	553-42404
TULT39-13BK	39.0	13.0	1.25	10 m	Black (BK)	553-43900
TULT39-13BU	39.0	13.0	1.25	10 m	Blue (BU)	553-43906
TULT39-13RD	39.0	13.0	1.25	10 m	Red (RD)	553-43902
TULT39-13WH	39.0	13.0	1.25	10 m	White (WH)	553-43909
TULT39-13YE	39.0	13.0	1.25	10 m	Yellow (YE)	553-43904

All dimensions in mm. Subject to technical changes.
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Identification tags for cable bundle, thermal transfer

TIPTAG PU - UV-stabilised Tiptags, Polyurethane

These Tiptags are designed for use in identifying wire and cable bundles in electronics and general cabling environments. The labels are applied to cables and harness assemblies with cable ties, and are also suitable for retrofit purposes. Secured to bundles using Cable Ties up to T50R width maximum.

Printers: TT4000+ and TT430

Ribbon: TTRC+

Software: TagPrint Pro

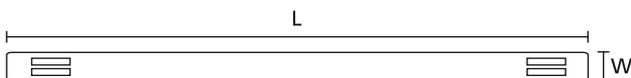
Features and Benefits

- Identification tags TIPTAG, Polyurethane
- Very tough and flexible material
- For bigger cable bundles and wires
- For cable ties up to 4.7 mm width
- Print with TT4000+ and TT430 for best results
- Delivery on reel, perforated
- Flame retardant
- Weather resistant
- Abrasion resistant
- Good resistance to chemicals
- Special lengths and colours available on request



The printed mark has a tattoo-like permanency.

MATERIAL	Polyurethane (PUR)
Operating Temperature	-65 °C to +120 °C, intermittent 150 °C
Flammability	Self extinguishing, UL94 V0 (3 mm)
Recommended Ribbon Type	TTRC+



TYPE	Length (L)	Width (W)	Pack Cont.	Colour	Article-No.
TTAGPU11X65WH	65.0	11.0	190 pcs.	White (WH)	556-25012
TTAGPU11X65YE	65.0	11.0	190 pcs.	Yellow (YE)	556-25019
TTAGPU15X65WH	65.0	15.0	190 pcs.	White (WH)	556-25007
TTAGPU15X65YE	65.0	15.0	190 pcs.	Yellow (YE)	556-25011
TTAGPU11X100WH	100.0	11.0	125 pcs.	White (WH)	556-25021
TTAGPU11X100YE	100.0	11.0	125 pcs.	Yellow (YE)	556-25020
TTAGPU15X100WH	100.0	15.0	125 pcs.	White (WH)	556-25006
TTAGPU15X100YE	100.0	15.0	125 pcs.	Yellow (YE)	556-25010

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Identification tags for cable bundle "Ladder Style", thermal transfer

TAGHT - High Temperature Tiptags "Ladder Style"

TAGHT is a high temperature, flame retardant, cross linked polyvinylidene fluoride (PVDFX) Tiptag used to identify cables and wire harnesses. The labels are applied to cables and harness assemblies with cable ties, and are also suitable for retrofit purposes. The material has been conditioned for printing on both thermal transfer and laser beam printers. The Tiptags are supplied on a continuous material roll. Simply print and press out the required Tiptag and apply with cable ties. Print with HellermannTyton's premium range of thermal printers and ribbons or a laser beam marking device.

Printers: TT4000+ and TT430

Ribbon: TTRHT

Accessories for TT4000+: Cutter (S4000)

Accessories for TT430: Cutter (S430)

Software: TagPrint Pro

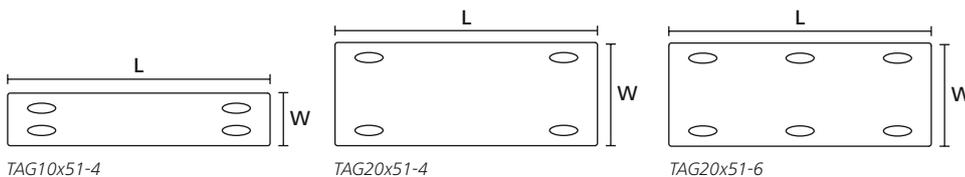
Features and Benefits

- TAGHT is a high temperature Tiptag
- Thermal transfer or laser beam printable
- Available in white
- Meets SAE AS-81531 and MIL-STD 202G Method 215 mark permanence tests
- Mark permanence tests of SAE AS-81531 4.6.2 and MIL-STD 202G Method 215; Laser beam YAG (unaffected), thermal transfer ribbon TTRHT (legible)
- Fulfils UL224 VW-1 and CSA requirements
- Good mechanical strength and highly flexible
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro



TAGHT.

MATERIAL	Polyvinylidene Fluoride cross-linked (PVDFX)
Operating Temperature	-55 °C to +225 °C
Flammability	UL224 VW-1
Recommended Ribbon Type	TTRHT
Specifications	MIL-STD-202G Method 215K, SAE - AS81531



TYPE	Length (L)	Width (W)	Pack Cont.	Colour	Article-No.
TAGHT10X51-4WH	51.0	10.0	2,000 pcs.	White (WH)	556-80000
TAGHT10X51-4YE	51.0	10.0	2,000 pcs.	Yellow (YE)	556-80001
TAGHT20X51-4WH	51.0	20.0	1,000 pcs.	White (WH)	556-80004
TAGHT20X51-4YE	51.0	20.0	1,000 pcs.	Yellow (YE)	556-80005
TAGHT20X51-6WH	51.0	20.0	1,000 pcs.	White (WH)	556-80002
TAGHT20X51-6YE	51.0	20.0	1,000 pcs.	Yellow (YE)	556-80003

All dimensions in mm. Subject to technical changes.
Minimum Order Quantity (MOQ) may differ from package content.



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Self-laminating labels, thermal transfer

Helatag 323 (White-Transparent), high temperature

The specially formulated adhesive labels give the highest quality print clarity when printed on thermal transfer printers. The range of materials and ribbons have been developed to suit the needs of most users. Designing and printing labels is simple and users can quickly print out professional labels in a matter of moments when using TagPrint Pro labelling software.

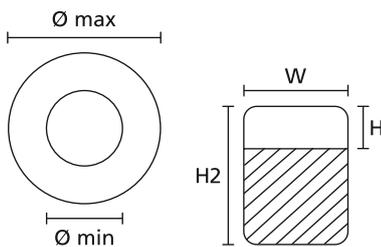
Features and Benefits

- High temperature self-laminating labels with a white inscription field
- Survives 5 years external weathering in central European climate
- Material is UL94 V0
- Excellent print performance using TT932DOUT ribbon
- Print with TT4000+, TT430 for best results
- Easy label design with TagPrint Pro
- Yellow and other colours available on request



Easy marking of flexible, semi-rigid and rigid cables and wires.

MATERIAL	Type 323, Polyvinylidene Fluoride (PVDF), white/transp. (WH/CL), yellow/transp. (YE/CL)
Operating Temperature	-40 °C to +140 °C
Curing Temperature	from +10 °C
Adhesive	Acrylic
Thickness of Foil (µm)	25 µm
Chem. Material Properties	Excellent resistance against water, UV radiation, weather influence and solvents based on petroleum.
Recommended Ribbon Type	TT932DOUT



TYPE	Bundle Ø min.	Bundle Ø max.	Width (W)	Height (H)	Height (H2)	Width of Liner (WL)	Labels per Row	Pack Cont.	Colour	Article-No.
TAG51TD3-323-WHCL	1.4	3.0	25.4	8.8	19.1	85.0	3	5,000 pcs.	White (WH), Transparent (CL)	596-51320
TAG26TD6-323-WHCL	1.5	3.0	12.7	9.5	19.1	85.0	6	10,000 pcs.	White (WH), Transparent (CL)	596-26320
TAG36TD7-323-WHCL	2.0	4.7	12.7	9.0	23.8	95.0	7	10,000 pcs.	White (WH), Transparent (CL)	596-36320
TAG2TD6-323-WHCL	3.5	7.6	12.7	12.7	36.5	82.0	6	5,000 pcs.	White (WH), Transparent (CL)	596-02320
TAG22TD3-323-WHCL	3.5	7.6	25.4	12.7	36.5	82.0	3	2,500 pcs.	White (WH), Transparent (CL)	596-22320
TAG24TD1-323-WHCL	3.5	7.6	50.8	12.7	36.5	55.0	1	1,000 pcs.	White (WH), Transparent (CL)	596-24320
TAG23TD5-323-WHCL	4.5	10.0	19.1	12.7	44.5	101.6	5	5,000 pcs.	White (WH), Transparent (CL)	596-23320
TAG25TD3-323-WHCL	4.5	10.0	25.4	12.7	44.5	82.0	3	2,500 pcs.	White (WH), Transparent (CL)	596-25320
TAG9TD3-323-WHCL	5.5	12.1	25.4	19.1	57.1	82.0	3	2,500 pcs.	White (WH), Transparent (CL)	596-09320
TAG10TD2-323-WHCL	5.5	12.1	49.5	19.1	57.1	101.6	2	1,000 pcs.	White (WH), Transparent (CL)	596-10320
TAG1TD2-323-WHCL	8.5	18.2	48.2	19.1	79.2	101.6	2	1,000 pcs.	White (WH), Transparent (CL)	596-01320
TAG3TD3-323-WHCL	10.0	22.2	25.4	25.4	95.3	82.0	3	1,000 pcs.	White (WH), Transparent (CL)	596-03320
TAG6TD1-323-WHCL	10.0	22.2	50.8	25.4	95.3	55.0	1	500 pcs.	White (WH), Transparent (CL)	596-06320
TAG107TD3-323-WHCL	12.0	37.5	25.4	31.8	149.9	82.0	3	1,000 pcs.	White (WH), Transparent (CL)	596-10732
TAG38TD3-323-WHCL	20.8	47.5	25.4	38.1	187.2	82.0	3	1,000 pcs.	White (WH), Transparent (CL)	596-38320
TAG07TD1-323-WHCL	20.8	47.5	50.8	25.4	187.2	55.0	1	250 pcs.	White (WH), Transparent (CL)	596-07320

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Identification ties and plates for marking cable bundles

IT Ties

One of the major benefits is the ability to both secure and identify cable bundles at different times.

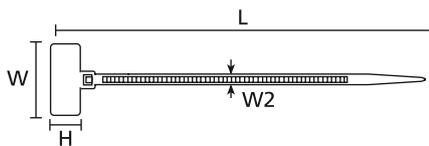
Features and Benefits

- Identification ties made of Polyamide 6.6
- For simple identification and securing of cable bundles in one step
- Printable labels are available for a professional finish
- Manual or temporary marking is possible with an indelible pen (T82S-BK / T82R-RD)

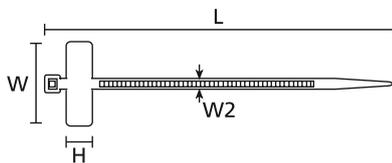


One operation with two benefits.

MATERIAL	Polyamide 6.6 (PA66)
Operating Temperature	-40 °C to +85 °C
Flammability	UL94 V2
Specifications	Cage Code 53421, DNV GL, MS3368, SAE - AS33681, UL-ZODZ2.E64139, DNV GL, UL-Recognised



IT18FL



IT18R

TYPE	Bundle Ø min.	Bundle Ø max.	Width (W)	Height (H)	Length (L)	Width (W2)		Recommended Labels	Pack Cont.	Colour	Article-No.
IT18FL	1.5	19.0	20.5	9.0	110.0	2.5	80	TAG18-07TD1	100 pcs.	Natural (NA)	111-81919
IT18R	6.0	22.0	25.0	8.0	100.0	2.3	80	TAG23-06TD1	100 pcs.	Natural (NA)	111-81821

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

= Minimum Loop Tensile Strength for Cable Ties (Newton)

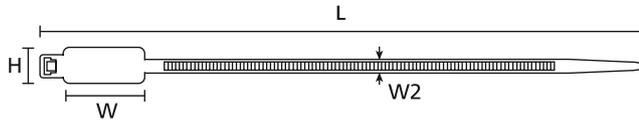


Please note! Not all products listed on this page may have this approval.

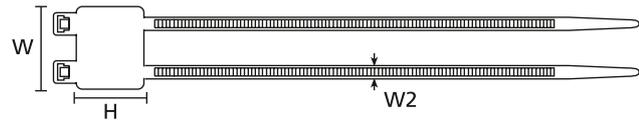


Identification ties and plates for marking cable bundles

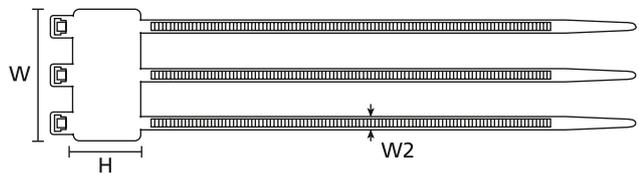
IT Ties



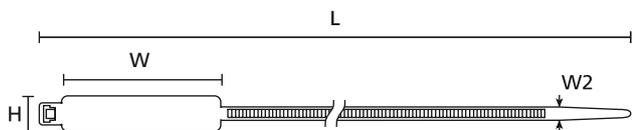
IT50R



IT50RD



IT50RT



IT50L

TYPE	Bundle Ø min.	Bundle Ø max.	Width (W)	Height (H)	Length (L)	Width (W2)		Recommended Labels	Pack Cont.	Colour	Article-No.
IT50R	9.5	44.5	28.0	12.9	203.0	4.6	225	TAG23-10TD1	100 pcs.	Natural (NA)	111-85019
IT50RD	10.0	44.0	29.0	26.3	205.0	4.7	225	TAG26-21TD1	50 pcs.	Natural (NA)	111-85219
IT50RT	10.0	44.0	46.0	26.3	205.0	4.7	225	TAG43-21TD1	50 pcs.	Natural (NA)	111-85119
IT50L	19.0	100.0	56.0	12.8	390.0	4.7	225	TAG52-10TD1	100 pcs.	Natural (NA)	111-85319

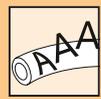
All dimensions in mm. Subject to technical changes.
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

TYPE	Description	Colour	Pack Cont.	Article-No.
T82S-BK	Indelible Marker Pen	Black (BK)	2 pcs.	500-50820
T82R-RD	Indelible Marker Pen	Red (RD)	2 pcs.	500-50822

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



Please note! Not all products listed on this page may have this approval.



Labels for IT ties, IMP plates and Q-tags, thermal transfer

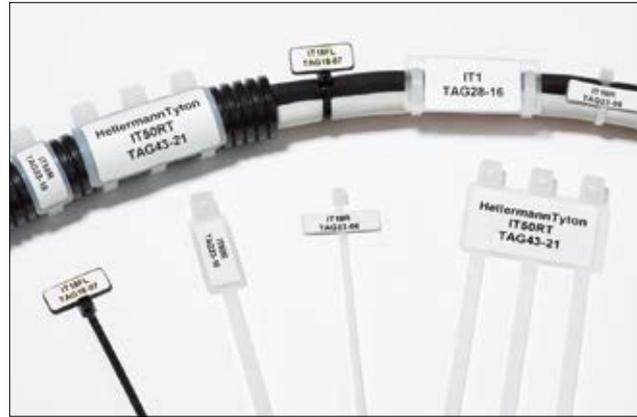
Helatag 892 (White)

These labels are specially tailored to the sizes used in the IT marking tie and IMP/IT as well as Q-tag range. The flexible material sticks to the marking tie or tag, even on rounded surfaces. Using unique numbering, graphics or barcodes the labels give excellent asset identification possibilities. This solution produces professional marking of tubes, pipes, cables and other parts.

For problem-free printing, we recommend TagPrint Pro software, TT4000+ and TT430 printers with TT822OUT ribbons.

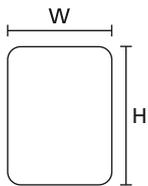
Features and Benefits

- Suited to the slightly rough surfaces of Q-tags, IT ties and IMP/IT plates
- Adheres to rounded surfaces
- Excellent print performance using TT822OUT ribbon
- Print with TT4000+, TT430 for best results
- Easy label design with TagPrint Pro



Identification ties and tags.

MATERIAL	Type 892, Vinyl (PVC), white (WH)
Operating Temperature	-40 °C to +80 °C
Curing Temperature	from 0 °C
Adhesive	Acrylic
Thickness of Foil (µm)	83 µm
Chem. Material Properties	Good resistance against water, oils and most solvents.
Recommended Ribbon Type	TT822OUT



TYPE	Width (W)	Height (H)	Width of Liner (WL)	Labels per Row	For Size	Pack Cont.	Colour	Article-No.
TAG18-07TD1-892-WH	18.0	7.0	24.0	1	IT18FL	5,000 pcs.	White (WH)	596-12253
TAG18-16TD1-892-WH	18.0	16.0	24.0	1	IMP1.5	2,500 pcs.	White (WH)	596-12254
TAG23-06TD1-892-WH	23.0	6.0	30.0	1	IT18R	5,000 pcs.	White (WH)	596-12255
TAG23-10TD1-892-WH	23.0	10.0	30.0	1	IT50R	5,000 pcs.	White (WH)	596-12256
TAG26-21TD2-892-WH	26.0	21.0	57.0	2	IT50RD	2,500 pcs.	White (WH)	596-12257
TAG28-16TD1-892-WH	28.0	16.0	34.0	1	IT1, IMP2	2,500 pcs.	White (WH)	596-12258
TAG43-16TD1-892-WH	43.0	16.0	50.0	1	IMP2.5	2,500 pcs.	White (WH)	596-12259
TAG43-21TD1-892-WH	43.0	21.0	50.0	1	IT50RT	2,500 pcs.	White (WH)	596-12260
TAG43-41TD1-892-WH	43.0	41.0	50.0	1	IMP2.5W1.75	1,000 pcs.	White (WH)	596-12261
TAG52-10TD1-892-WH	52.0	10.0	58.0	1	IT50L	5,000 pcs.	White (WH)	596-12262
TAG63TD1-892-WH	63.5	38.1	70.0	1	QT7040R, QT7040S	1,000 pcs.	White (WH)	596-12263
TAG68-16TD1-892-WH	68.0	16.0	74.0	1	IMP3.5, QT7016R	2,500 pcs.	White (WH)	596-12264
TAG102-64TD1-892-WH	102.0	64.0	106.0	1	QT10065R	250 pcs.	White (WH)	596-12265

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Type label identification, thermal transfer

Helatag 1204 (Silver)

Scratch-resistant type plates for the industry. The high temperature range suits a wide range of applications on flat surfaces. The adhesive is also suitable for critical surfaces like plastic and paint.

Designing and printing labels is simple and users can quickly print out professional labels in a matter of moments when using TagPrint Pro labelling software.

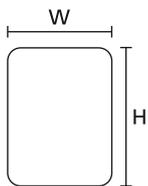
Features and Benefits

- Marking labels made of matt silver Polyester
- Replacement option for aluminium plates
- Print labels with customer unique references
- Use text, graphics and barcodes as required
- Excellent print performance using TT822OUT ribbon
- Print with TT4000+, TT430 for best results
- Easy label design with Tagprint Pro



Professional type plate on a heating unit.

MATERIAL	Type 1204, Polyester (PET), silver matt (SR)
Operating Temperature	-40 °C to +150 °C
Curing Temperature	from 0 °C
Adhesive	Acrylic
Thickness of Foil (µm)	55 µm
Chem. Material Properties	Excellent resistance to water, alcohol, most oils, greases, fuel, aliphatic solvents, weak acids, salts and alkalis.
Recommended Ribbon Type	TT822OUT
Specifications	UL-Recognised



TYPE	Width (W)	Height (H)	Width of Liner (WL)	Labels per Row	Pack Cont.	Colour	Article-No.
TAG71TD6-1204-SR	12.7	11.1	101.6	6	15,000 pcs.	Silver (SR)	596-12071
TAG13TD4-1204-SR	19.1	6.4	101.6	4	10,000 pcs.	Silver (SR)	596-12043
TAG34TD3-1204-SR	25.4	9.5	85.1	3	7,500 pcs.	Silver (SR)	596-34120
TAG15TD3-1204-SR	25.4	12.7	85.1	3	7,500 pcs.	Silver (SR)	596-12045
TAG35TD3-1204-SR	31.8	9.5	101.6	3	7,500 pcs.	Silver (SR)	596-12035
TAG17TD2-1204-SR	38.1	6.4	85.1	2	5,000 pcs.	Silver (SR)	596-12047
TAG27TD2-1204-SR	38.1	19.1	85.1	2	5,000 pcs.	Silver (SR)	596-27120
TAG67TD2-1204-SR	38.1	31.8	85.1	2	1,000 pcs.	Silver (SR)	596-12067
TAG69TD2-1204-SR	40.6	22.9	89.0	2	2,500 pcs.	Silver (SR)	596-12069
TAG77TD1-1204-SR	50.8	22.9	55.0	1	2,000 pcs.	Silver (SR)	596-12077
TAG73TD1-1204-SR	50.8	25.4	55.0	1	2,000 pcs.	Silver (SR)	596-73124
TAG66TD1-1204-SR	50.8	36.5	56.8	1	1,000 pcs.	Silver (SR)	596-12066
TAG63TD1-1204-SR	63.5	38.1	70.0	1	1,000 pcs.	Silver (SR)	596-12063
TAG76TD1-1204-SR	63.5	50.8	70.0	1	500 pcs.	Silver (SR)	596-12076

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

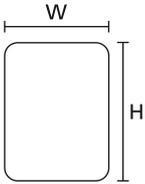


Please note! Not all products listed on this page may have this approval.



Type label identification, thermal transfer

Helatag 1204 (Silver)



TYPE	Width (W)	Height (H)	Width of Liner (WL)	Labels per Row	Pack Cont.	Colour	Article-No.
TAG72TD1-1204-SR	69.9	31.8	76.0	1	1,000 pcs.	Silver (SR)	596-12072
TAG65TD1-1204-SR	76.2	36.5	82.0	1	1,000 pcs.	Silver (SR)	596-12065
TAG62TD1-1204-SR	76.2	50.8	82.0	1	500 pcs.	Silver (SR)	596-12062
TAG64TD1-1204-SR	88.9	36.5	95.0	1	1,000 pcs.	Silver (SR)	596-12064
TAG97TD1-1204-SR	101.6	74.0	106.0	1	500 pcs.	Silver (SR)	596-71204
TAGR3TD1-1204-SR	104.0	-	108.0	1	75.0 m	Silver (SR)	596-31204
TAG02TD1-1204-SR	104.0	12.0	104.0	1	5,000 pcs.	Silver (SR)	596-21204

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



Please note! Not all products listed on this page may have this approval.

Asset identification label, thermal transfer

Helatag 1206 (White)

Scratch-resistant general identification for industrial applications. The high temperature range suits a wide range of applications on flat surfaces. The adhesive is also suitable for critical surfaces such as plastic and paint coated.

Features and Benefits

- Ideal for machinery operating in high temperature areas (up to +150 °C)
- Barcodes and alphanumeric text remain pin sharp on this high quality material
- Excellent print performance using TT822OUT ribbon
- Print with TT4000+, TT430 for best results
- Easy label design with Tagprint Pro



Helatag label for a permanent asset identification.

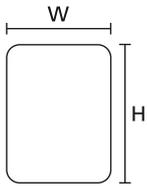
MATERIAL	Type 1206, Polyester (PET), white gloss (GSWH)
Operating Temperature	-40 °C to +150 °C
Curing Temperature	from 0 °C
Adhesive	Acrylic
Thickness of Foil (µm)	50 µm
Chem. Material Properties	Excellent resistance to water, alcohol, most oils, greases, fuel, aliphatic solvents, weak acids, salts and alkalis.
Recommended Ribbon Type	TT822OUT
Specifications	UL-Recognised





Asset identification label, thermal transfer

Helatag 1206 (White)



TYPE	Width (W)	Height (H)	Width of Liner (WL)	Labels per Row	Pack Cont.	Colour	Article-No.
TAG71TD6-1206-WH	12.7	11.1	101.6	6	15,000 pcs.	White gloss (GSWH)	596-12671
TAG13TD4-1206-WH	19.1	6.4	101.6	4	10,000 pcs.	White gloss (GSWH)	596-12061
TAG16TD3-1206-WH	22.9	6.4	80.0	3	10,000 pcs.	White gloss (GSWH)	596-12616
TAG61TD3-1206-WH	25.4	4.8	89.0	3	10,000 pcs.	White gloss (GSWH)	596-12661
TAG01TD3-1206-WH	25.4	6.4	89.0	3	7,500 pcs.	White gloss (GSWH)	596-01120
TAG34TD3-1206-WH	25.4	9.5	85.1	3	7,500 pcs.	White gloss (GSWH)	596-12634
TAG15TD3-1206-WH	25.4	12.7	85.1	3	7,500 pcs.	White gloss (GSWH)	596-12615
TAG31TD3-1206-WH	25.4	19.1	85.1	3	5,000 pcs.	White gloss (GSWH)	596-12631
TAG35TD3-1206-WH	31.8	9.5	101.6	3	7,500 pcs.	White gloss (GSWH)	596-12635
TAG17TD2-1206-WH	38.1	6.4	85.1	2	5,000 pcs.	White gloss (GSWH)	596-12617
TAG27TD2-1206-WH	38.1	19.1	85.1	2	2,500 pcs.	White gloss (GSWH)	596-12627
TAG67TD2-1206-WH	38.1	31.8	85.1	2	2,500 pcs.	White gloss (GSWH)	596-12667
TAG69TD2-1206-WH	40.6	22.9	89.0	2	2,500 pcs.	White gloss (GSWH)	596-12669
TAG77TD1-1206-WH	50.8	22.9	55.0	1	2,000 pcs.	White gloss (GSWH)	596-71206
TAG68TD1-1206-WH	63.5	25.4	69.0	1	2,000 pcs.	White gloss (GSWH)	596-12668
TAG63TD1-1206-WH	63.5	38.1	70.0	1	1,000 pcs.	White gloss (GSWH)	596-12663
TAG76TD1-1206-WH	63.5	50.8	70.0	1	500 pcs.	White gloss (GSWH)	596-61206
TAG4TD1-1206-WH	65.0	20.0	70.0	1	2,500 pcs.	White gloss (GSWH)	596-41206
TAG72TD1-1206-WH	69.9	31.8	76.0	1	1,000 pcs.	White gloss (GSWH)	596-12672
TAG65TD1-1206-WH	76.2	36.5	82.0	1	1,000 pcs.	White gloss (GSWH)	596-12665
TAG64TD1-1206-WH	88.9	36.5	95.0	1	1,000 pcs.	White gloss (GSWH)	596-12664

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Please note! Not all products listed on this page may have this approval.



Tamper evident security labelling, thermal transfer

Helatag 1208 (White), fragmenting

The specially formulated adhesive labels give the highest quality print clarity when printed on thermal transfer printers. The range of materials and ribbons have been developed to suit the needs of most users. Designing and printing labels is simple and users can quickly print out professional labels in a matter of moments when using TagPrint Pro labelling software.

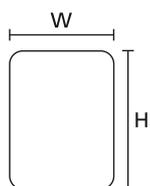
Features and Benefits

- A security label that fragments on removal
- Designed weak spots makes label removal time consuming
- Excellent print performance using TT822OUT ribbon
- Print with TT4000+, TT430 for best results
- Easy label design with Tagprint Pro



A secure way of identifying if an asset label has been tampered with.

MATERIAL	Type 1208, Acetate foil (CA), white (WH), tamper-proof
Operating Temperature	-40 °C to +150 °C
Curing Temperature	from +4 °C
Adhesive	Acrylic
Thickness of Foil (µm)	56 µm
Chem. Material Properties	Resistant to oils, water and solvents
Recommended Ribbon Type	TT822OUT



TYPE	Width (W)	Height (H)	Width of Liner (WL)	Labels per Row	Pack Cont.	Colour	Article-No.
TAG71TD6-1208-WH	12.7	11.1	101.6	6	15,000 pcs.	White (WH)	596-20871
TAG15TD3-1208-WH	25.4	12.7	85.1	3	7,500 pcs.	White (WH)	596-12080
TAG27TD2-1208-WH	38.1	19.1	85.1	2	2,500 pcs.	White (WH)	596-12082
TAG67TD2-1208-WH	38.1	31.8	85.1	2	2,500 pcs.	White (WH)	596-12087
TAG69TD2-1208-WH	40.6	22.9	89.0	2	2,500 pcs.	White (WH)	596-12089
TAG73TD1-1208-WH	50.8	25.4	55.0	1	2,000 pcs.	White (WH)	596-31208
TAG66TD1-1208-WH	50.8	36.5	56.8	1	1,000 pcs.	White (WH)	596-12086

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Tamper evident security labelling, thermal transfer

Helatag 951 (Silver, Transparent), 2 parts

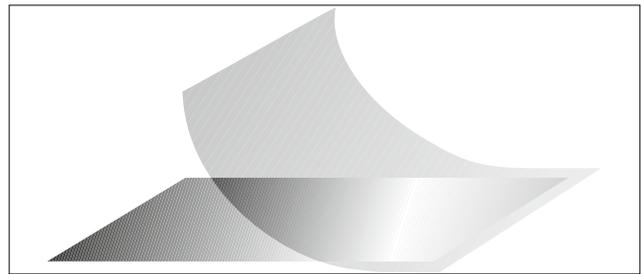
For automotive and electric industries for tamper-proof applications. Particularly suitable as a type label according to norms of German Kraftfahrtbundesamt (KBA).

Features and Benefits

- 2-part label, delivered on reel together with the protective label
- Designed for highly visible and rugged identification on trucks and trailers
- Tamper evident, when pulled off a checkered pattern will be visible as evident
- High durability in outside use
- Meets requirements of the KBA (Kraftfahrtbundesamt [German Federal Motor Transport Authority])
- Thickness of 951A label 36 µm, and 951B laminate 25 µm
- Particularly suitable as type label for vehicles
- Excellent print performance using TT822OUT ribbon
- Print with TT4000+, TT430 for best results
- Easy label design with TagPrint Pro

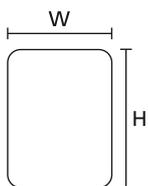


Type plate of an HGV trailer with protective laminate.



The printed silver type plate (Mat. 951A) is protected by the transparent laminate (Mat. 951B).

MATERIAL	Type 951, Polyester (PET), silver (SR) and Polyester (PET), transparent (CL)
Operating Temperature	-40 °C to +150 °C
Curing Temperature	from 0 °C (label), from +4 °C (laminate)
Adhesive	Acrylic
Thickness of Foil (µm)	36 µm, 25 µm
Chem. Material Properties	Excellent resistance to water, alcohol, most oils, greases, fuel, aliphatic solvents, weak acids, salts and alkalis.
Recommended Ribbon Type	TT822OUT
Specifications	KBA (Kraftfahrzeugbundesamt) Germany, UL-Recognised



TYPE	Width (W)	Height (H)	Width of Liner (WL)	Labels per Row	Pack Cont.	Colour	Article-No.
TAG25.4-12.7TD1-951 SET	25.4	12.7	31.5	1	1,000 pcs.	Silver (SR)	596-44951
TAG50.8-25.4TD1-951 SET	50.8	25.4	56.8	1	1,000 pcs.	Silver (SR)	596-43951
TAG63.5-50.8TD1-951 SET	63.5	50.8	69.5	1	500 pcs.	Silver (SR)	596-42951
TAG101-74TD1-951 SET	101.6	74.0	107.0	1	250 pcs.	Silver (SR)	596-41951
TAG101-160TD1-951 SET	101.6	160.0	105.8	1	250 pcs.	Silver (SR)	596-40951

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Please note! Not all products listed on this page may have this approval.



Stainless Steel Printing System

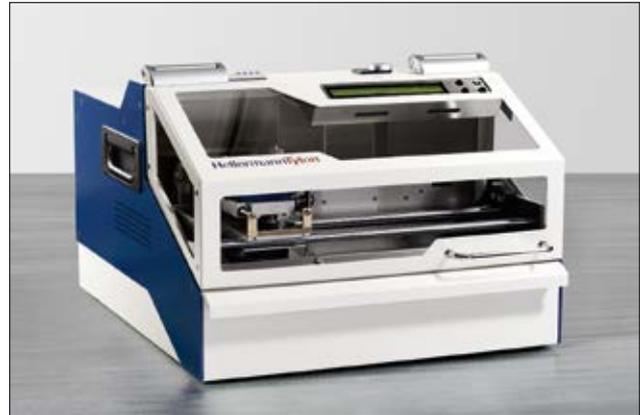
M-BOSS Compact

M-BOSS Compact is a quiet easy-to-use metal plate embossing printer with a small production footprint. It is simple to install and operate and only needs a standard electrical supply and a PC. Texts are created with Tagprint Pro 3.0. Simply open the easy to use program to create print lists. Improved cooling system now ensures a continuous operation between 8-10 hours.

Marker plates are attached to pipes and cables using 4.6 mm width MBT cable ties and a MK9SST hand tool.

Features and Benefits

- Small and easy to use metal plate embosser
- Quiet embossing mechanism suited to production and office environments
- Emboss first marker within a minute of power up
- Embossed characters have been tested to withstand 1.5 million strikes each
- Improved cooling systems allows 8-10 hours continuous printing
- Use Tagprint Pro 3.0 labelling software with pre-loaded templates to simplify print jobs
- Powered by a standard electrical supply
- Organiser is available to manage printed output (UNS: 544-21000), increases printer weight to 45 kg
- Printer is delivered with the following 45 piece 4 mm character set:
Letters: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Numbers: 0 1 2 3 4 5 6 7 8 9
Symbols: & - / . , ' Ä, Ö, Ü



A quiet, durable, and easy to use metal plate embossing printer.

Print Method	Embossed
Power Supply	110 Volt AC- 240 Volt AC 50/60 Hz
Cycle Time	1 second per character
Printer Interfaces	USB 2.0
System Requirements	MS Windows XP, W7
Dimensions W x H x D	480 mm x 360 mm x 570 mm
Weight	41 kg
Specifications	CE

RoHS

TYPE	Pack Cont.	Article-No.
M-BOSS Compact	1 pcs.	544-20000

Subject to technical changes.



1.5 million strikes per character without maintenance



Please note! Not all products listed on this page may have this approval.

M-BOSS Compact and Organiser

M-BOSS Compact and Organiser system gives the added advantage of a self-contained storage system within the print unit.

The organiser is a 10 container carousel storage system that can be programmed to hold either an individual or a pre-defined set of marker plates. This means that users have the flexibility to manage how they work with the printed output. A simple input screen on the top of the machine is used to specify the quantity per container within the carousel. The carousel drawer when opened extends 430mm from the front of the printer.

Features and Benefits

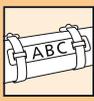
- Ability to manage how the printed marker plates are organised
- Carousel system under the printer has 10 removable marker plate containers
- Flexible output means all marker plates or a set amount can be sent to each container
- Carousel system will hold up to 400 markers
- Each container can hold 40 marker plates



A simple solution to managing your printer output.

TYPE	Pack Cont.	Article-No.
M-BOSS Compact Organiser	1 pcs.	544-21000

Subject to technical changes.



Stainless Steel Printing System

M-BOSS Compact Markers

M-BOSS Markers are used in all areas where severe mechanical or chemical conditions occur e.g. offshore industry, marine engineering, petrochemical industry, mining, underground or on radio and cellular masts where mark permanence is critical.

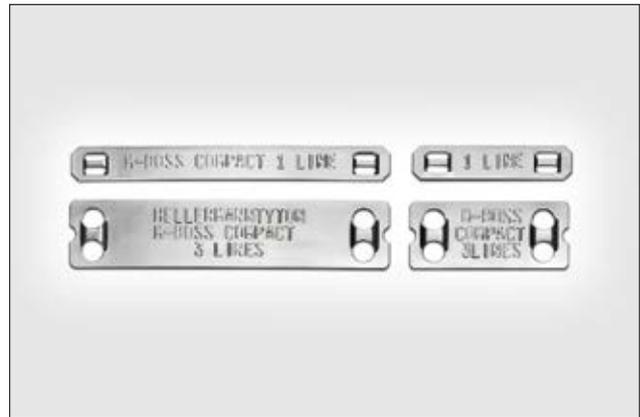
The raised surface of the embossed print ensures that the text remains visible even with dirt, grease, and paint cover the marker. The physical characteristics of the metal and the height of the embossed mark allows users to apply a stiff or metallic brush to the surface and remove excess layers of paint or grease without damaging the integrity of the text.

Features and Benefits

- Raised marking ensure text visibility even when covered in dust, debris, grease and oil
- Stainless steel grade SS316 is suited for use in harsh environments
- Marker plates are designed for use with stainless steel cable ties with a 4.6 mm strap width
- Apply ties with a MK9SST



One Step to the Web!

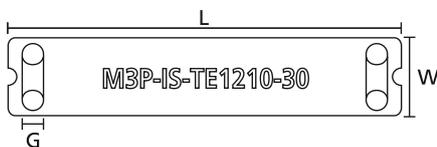


A range of metal plate sizes to suit your needs.



Identification for hazardous environments: M-BOSS Compact stainless steel markers.

MATERIAL	Stainless Steel (SS316)
Operating Temperature	-80 °C to +538 °C



MBML

TYPE	Strap Width max. (G)	Number of lines	Characters per line	Number of characters	Width (W)	Length (L)	Pack Cont.	Article-No.
MBML10X45	4.6	1	8	8	10.0	45.0	1,000 pcs.	544-80101
MBML10X90	4.6	1	23	23	10.0	90.0	500 pcs.	544-80102
MBML20X45	4.6	3	8	24	20.0	45.0	1,000 pcs.	544-80201
MBML20X90	4.6	3	23	69	20.0	90.0	500 pcs.	544-80202

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Identification plates for marking cable bundles

HFTP PEEK

PEEK tags have been specifically designed for use in high temperature environments. The HFTP tags are applied to cables and harness assemblies with cable ties, and are also suitable for retrofit purposes. The material has been conditioned for printing with a laser beam and gives both excellent print definition and print durability.

Features and Benefits

- HFTP is an aerospace standard Tiptag
- Laser beam printable
- Available in beige
- Fixed with PEEK cable ties

Features Material PEEK

- -55 °C to +240 °C operating temperature
- Excellent resistance against chemicals and gamma radiation



A clearly better way of identifying cables and pipes.



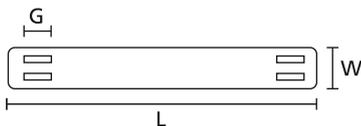
Other dimensions are available on request.



Material specification please see page 16.



Please find more PEEK products for your system solutions: see page 38, 62, 65.

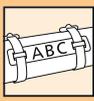


HFTP48

TYPE	Length (L)	Width (W)	Pack Cont.	Colour	Material	Article-No.
HFTP48	48.0	9.5	2,500	Beige (BGE)	PEEK	151-00911

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Protective Laminates, thermal transfer

Helatag 323 (Transparent), high temperature

The specially formulated adhesive labels give the highest quality print clarity when printed on thermal transfer printers. The range of materials and ribbons have been developed to suit the needs of most users. Designing and printing labels is simple and users can quickly print out professional labels in a matter of moments when using TagPrint Pro labelling software.

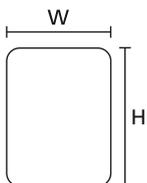
Features and Benefits

- High temperature transparent material
- Ideal as a protective laminate or as a printed label
- Survives 5 years external weathering in central European climate
- Material is UL94 V0
- Excellent print performance using TT822OUT ribbon
- Print with TT4000+, TT430 for best results
- Easy label design with TagPrint Pro



Helatag protective laminates.

MATERIAL	Type 323, Polyvinylidene Fluoride (PVDF), transparent (CL)
Operating Temperature	-40 °C to +140 °C
Curing Temperature	from +10 °C
Adhesive	Acrylic
Thickness of Foil (µm)	25 µm
Chem. Material Properties	Excellent resistance against water, UV radiation, weather influence and solvents based on petroleum.
Recommended Ribbon Type	TT822OUT



TYPE	Width (W)	Height (H)	Width of Liner (WL)	Labels per Row	Pack Cont.	Colour	Article-No.
TAG0623TL3-323-CL	27.9	11.4	101.6	3	5,000 pcs.	Transparent (CL)	596-23321
TAG0638TL2-323-CL	43.2	11.4	94.9	2	5,000 pcs.	Transparent (CL)	596-38321
TAG1351TL1-323-CL	55.9	17.8	62.0	1	2,000 pcs.	Transparent (CL)	596-51321
TAG2551TL1-323-CL	55.9	30.5	62.0	1	1,000 pcs.	Transparent (CL)	596-52321
TAG3863TL1-323-CL	68.6	43.2	75.0	1	1,000 pcs.	Transparent (CL)	596-63321

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Labelling software

TagPrint Pro 3.0

Easily import a variety of image types into the label design. Use any Windows based font in the label design for complete customization. Layer objects like professional page layout programs. Rulers on top and side allow for exact placement of object. Easily change text colour, fill colour and border colour to make text stand out and accomplish "full reverse" printing. Allow text characters to be stretched or compressed to almost any height or width. Draw lines, circles and boxes on the label as a simple way of making the label look more professional.

Features and Benefits

- Alphanumeric sequences
- Print to multiple printers at one time
- Save jobs in a queue and print all at one time with "Print later" function
- Print faster
- Connect or import directly from other databases including Excel, Access, text files
- More bar code types
- Inverse, flip, and mirror image options for graphic images
- Multi-lingual
- Print log available
- Manually adjust font size to 1/10 of a point
- Customize height and width of characters
- Customize line spacing
- And much more!



The easy to use software speeds up production of markers, labels and identification tags.

System Requirements	PC running Microsoft Windows XP SP3, Vista SP1 or later, Windows 7 .NET Framework 4, Windows 8 512 MB RAM (XP SP3) 1.0 GB RAM (Vista/Windows 7/Windows 8) 500 MB available hard disk space
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TYPE	Pack Cont.	Article-No.
TagPrint Pro 3.0 EMEA	1 pcs.	556-00051

Subject to technical changes.



Thermal transfer printer

TT430

Features and Benefits

- Medium volume single sided printing
- Print on THTT DS, TLFX DS, TDRT DS and TULT DS (Ladder Products)
- Print on THTT, TLFX, TDRT, TULT, and TCGT (Continuous Tubing)
- Print on TAGHT, TAGLF, TAGDR, TAGUL, TAGPU, Tiptags
- Print on Adhesive Labels
- Uses standard ribbons
- Barcodes: standard and 2D
- Print speed up to 125 mm/s (30mm/s recommended for Ladder Products and Tubing)
- Adjustable label sensor
- Multiple language selection
- Windows drivers: 32/64 bit for Windows XP, Windows Vista, Windows 7 and Windows 8
- Options: External Reel Holder, Cutter (S430) and Perforator (P430)



TT430 thermal transfer printer.

Print Method	Thermal Transfer
Print Head Type	300 dpi, flat type
Print Speed	up to 125 mm/s
Max. Print Width	106 mm
Label Height Max (metric)	1,000 mm
Printer Interfaces	USB 2.0, Ethernet 10/100 Base T
Supported Barcodes, Printer	Standard and 2D
Printer Memory	64 MB RAM
Dimensions W x H x D	253 mm x 189 mm x 322 mm
Weight	4 kg
Specifications	CE, FCC, UL



One Step to the Web!



TYPE	Pack Cont.	Article-No.
TT430	1 pc.	556-00450

Subject to technical changes.

TYPE	Description	Pack Cont.	Article-No.
S430 Cutter	Cutter for TT430	1 pc.	556-00452
TT External Reel Holder	External Reel Holder	1 pc.	556-00451
TT430 300dpi Printhead	Printhead for TT430	1 pc.	556-00453
TT430 Print Roller	Print Roller for TT430	1 pc.	556-00454

Subject to technical changes.



Please note! Not all products listed on this page may have this approval.



Thermal transfer printer

TT4000+

Features and Benefits

- High volume single sided printing
- Print on THTT DS, TLFX DS, TDRT DS and TULT DS (Ladder Products)
- Print on THTT, TLFX, TDRT, TULT, and TCGT (Continuous tubing)
- Print on TAGHT, TAGLF, TAGDR, TAGUL, TAGPU, Tiptags
- Print on Adhesive Labels
- Uses standard 300 m ribbons
- Barcodes: standard and 2D
- Print speed up to 125 mm/s (30 mm/s recommended for Ladder Products and Tubing)
- Multiple language selection
- Windows drivers: 32 / 64 bit for Windows XP, Windows Vista, Windows 7 and Windows 8
- Options: External Reel Holder (556-00451), Cutter (S4000), Perforator (P4000)



TT4000+ series printer.

Print Method	Thermal Transfer
Print Head Type	300 dpi, flat type
Print Speed	30, 40, 50, 75, 100, 125 mm/s
Max. Print Width	105.6 mm
Label Height Max (metric)	4,000 mm
Printer Interfaces	RS232 C, USB 2.0, Ethernet 10/100 Base T
Supported Barcodes, Printer	Standard, 2D
Printer Memory	64 MB RAM
Dimensions W x H x D	242 mm x 274 mm x 446 mm
Weight	10 kg
Specifications	CE, FCC, UL



TYPE	Pack Cont.	Article-No.
TT4000+ 300dpi	1 pc.	556-04000

Subject to technical changes.

TYPE	Description	Pack Cont.	Article-No.
S4000 Cutter	S4000 Cutter for TT4000+ and TrakMark DS	1 pc.	556-04025
P4000 Perforator	Perforator for TT4000+ and TrakMark DS	1 pc.	556-04024
TT External Reel Holder	External Reel Holder	1 pc.	556-00451
300dpi Printhead for TT4000 & TT4000+	Printhead for TT4000+	1 pc.	556-04004
Printer Roller TT4000	Printer Roller for TT4000+	1 pc.	556-04005

Subject to technical changes.



Thermal transfer ribbons for

Adhesive Labels

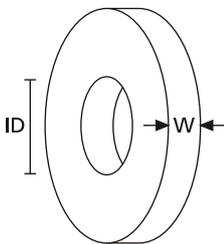
The thermal transfer print technology is based on heating up certain dots in the print head. This transfers the ink very precisely from the ribbon onto the surface of the printed material.

Features and Benefits

- Thermal transfer ribbons for highest quality and performance of printed labels
- Ribbons are specifically designed to maximise print performance for the recommended material



Ribbons for printing on Adhesive Labels.



ID: The standard inside core diameter is 25.4 mm.

TYPE	Recommended Material	Colour	Width (W)	Reel Length	Article-No.
TT822OUT 60MM	323/823/880/951/1203/1204/1206/1208/1210/1211/1213/1216/1220/1221	Black (BK)	60.0	300 m	556-00111
TT822OUT 110MM	323/823/880/951/1203/1204/1206/1208/1210/1211/1213/1216/1220/1221	Black (BK)	110.0	300 m	556-00101
TT932DOUT 85MM	323/1209	Black (BK)	85.0	300 m	556-00117
TT932DOUT 110MM	323/1209	Black (BK)	110.0	300 m	556-00118

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Please note! Not all products listed on this page may have this approval.



Thermal printer ribbons for

Heatshrink and TipTags

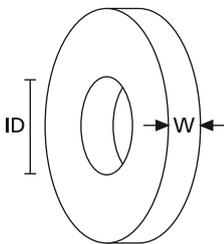
The TTDTHOUT ribbon consists of a special resin composition. In combination with our identification materials the printing is high resistant against high temperatures, scratches and chemicals. The thermal transfer print technology is based on heating up certain dots in the print head. This transfers the ink very precisely from the ribbon onto the surface of the printed material.

Features and Benefits

- Thermal transfer ribbons for high quality print results on heatshrink tubing and TIPTAG identification tags
- Ribbons are specifically designed to maximise print performance for the recommended material



Ribbons for printing on Tubing and TipTags.



ID: The standard inside core diameter is 25.4 mm.

TYPE	Recommended Material	Colour	Width (W)	Reel Length	Article-No.
TTDTHOUT 60MM	TCGT/TULT/TLFX/TDRT/TIPTAG	Black (BK)	60.0	300 m	556-00140
TTDTHOUT 100MM	TCGT/TULT/TLFX/TDRT/TIPTAG	Black (BK)	100.0	300 m	556-00141
TTRHTBK 70MM	THTT/THTT DS/TAGHT	Black (BK)	70.0	300 m	556-00204
TTRHTBK 100mm	THTT/THTT DS/TAGHT	Black (BK)	100.0	300 m	556-00210
TTRHTWH 70mm	THTT/THTT DS/TAGHT	White (WH)	70.0	300 m	556-00209
TTRHTWH 100mm	THTT/THTT DS/TAGHT	White (WH)	100.0	300 m	556-00211

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

