

GAMMA-MARK, series of high performance heat shrinkable identification sleeves are made from highly durable, flame retardant, radiated polyolefin. GAMMA-MARK markers are conveniently available in a 2:1 and 3:1 shrink ratio.

The 2:1, MARK-221, is thick, rugged and easy to handle. The 3:1, MARK-321, is light-weight, fast-shrinking, versatile sleeve, which allows for the reduction in inventory. Both MARK-221 & MARK-321 meet the stringent requirements of AMS-DTL-23053/5 CL1&3 and the mark permanence of SAE-AS-81531 before and after shrinking. Marking on GAMMA-MARK sleeves allows for a permanent mark resistant to abrasion, aggressive cleaning solvents, and military fuels and oils. GAMMA markers are designed to be printed on by a dot matrix or a thermal transfer printer. Markers are held between two perforated plastic strips and are supplied in the standard 2" length. This allows for more accuracy, a cleaner print, and less room for error.

- 2:1 & 3:1 version (MARK-221 & MARK-321)
- Available in thick wall (MARK-321HW), thin wall (MARK-321) and Halogen Free (MF-321 or MF-221) Military Specified Material and Print Performance
- Permanent Marking
- UL Recognized, VW-1 Flame Test (MARK-221 & MARK-321) cUL Recognized
- Fast Recovery & Easy Application
- Material Meets Milspec AMS-DTL-23053/5 CL1&3
- Printing Meets SAE-AS-81531, MIL-STD-202F Method 215J Perforated Plastic Sides Make for Easy and Quick Application RoHS Compliant
- Standard Width is 2". Perforated Sleeves available to make 1" long, 1.5" long or .66" lengths.



Characteristics

- Operating Temperature: -55°C to 135°C
- Minimum Recovery Temperature: 85°C
- Fully Recovered Temperature: 115°C
- Maximum Storage Temperature: 50°C

MARK-321 SIZE DIMENSIONS (Thin Wall)

| Thin Wall Material | | Pcs per Spool | Pcs Box | Expanded as Supplied, mm | | | Max Recovery, mm | |
|--------------------|--------|---------------|---------|--------------------------|----------------|-------------------|------------------|------|
| Gamma P/N | Size | | | ID | Flat Width, W2 | Wall Thickness 2X | ID | W.T. |
| MARK-321-3/32 | 3/32" | 250 | 9000 | 2.36 | 3.7 | 0.36 | 0.79 | 0.56 |
| MARK-321-1/8 | 1/8" | 250 | 9000 | 3.18 | 5 | 0.36 | 1.07 | 0.56 |
| MARK-321-3/16 | 3/16" | 250 | 9000 | 4.75 | 7.5 | 0.37 | 1.57 | 0.57 |
| MARK-321-1/4 | 1/4" | 250 | 9000 | 6.35 | 10 | 0.38 | 2.11 | 0.58 |
| MARK-321-3/8 | 3/8" | 250 | 9000 | 9.53 | 15 | 0.39 | 3.18 | 0.60 |
| MARK-321-1/2 | 1/2" | 250 | 9000 | 12.7 | 19.9 | 0.39 | 4.22 | 0.61 |
| MARK-321-3/4 | 3/4" | 250 | 9000 | 19.05 | 30 | 0.4 | 6.35 | 0.63 |
| MARK-321-1 | 1" | 250 | 4000 | 25.4 | 39.9 | 0.44 | 8.46 | 0.64 |
| MARK-321-1 1/2 | 1 1/2" | 250 | 3000 | 38.1 | 59.8 | 0.43 | 12.7 | 0.66 |
| MARK-321-2 | 2" | 250 | 2000 | 50.8 | 79.8 | 0.44 | 25.4 | 0.68 |
| MARK-321-2 1/4 | 2.25" | 100 | 1000 | 57.15 | 89.8 | 0.46 | 19.05 | 0.70 |
| MARK-321-3 | 3" | 100 | 1000 | 76.2 | 119.7 | 0.46 | 25.4 | 0.71 |

| Thin Wall Material | | Pcs per Spool | Pcs Box | Expanded as Supplied, mm | | | Max Recovery, mm | |
|--------------------|--------|---------------|---------|--------------------------|----------------|-------------------|------------------|------|
| Gamma P/N | Size | | | ID | Flat Width, W2 | Wall Thickness 2X | ID | W.T. |
| MARK-321HW-3/32 | 3/32" | 250 | 9000 | 2.36 | 3.7 | 0.62 | 0.79 | 0.68 |
| MARK-321HW-1/8 | 1/8" | 250 | 9000 | 3.18 | 5 | 0.63 | 1.06 | 0.68 |
| MARK-321HW-3/16 | 3/16" | 250 | 9000 | 4.75 | 7.5 | 0.64 | 1.59 | 0.69 |
| MARK-321HW-1/4 | 1/4" | 250 | 9000 | 6.35 | 10 | 0.65 | 2.36 | 0.7 |
| MARK-321HW-3/8 | 3/8" | 250 | 9000 | 9.53 | 15 | 0.67 | 3.18 | 0.72 |
| MARK-321HW-1/2 | 1/2" | 250 | 9000 | 12.7 | 19.9 | 0.68 | 4.75 | 0.73 |
| MARK-321HW-3/4 | 3/4" | 250 | 9000 | 19.1 | 30 | 0.69 | 6.35 | 0.75 |
| MARK-321HW-1 | 1" | 250 | 9000 | 25.4 | 39.9 | 0.71 | 8.47 | 0.76 |
| MARK-321HW-1 1/2 | 1 1/2" | 250 | 4000 | 38.1 | 59.8 | 0.73 | 12.7 | 0.78 |
| MARK-321HW-2 | 2" | 250 | 3000 | 50.8 | 79.8 | 0.75 | 16.9 | 0.8 |
| MARK-321HW-3 | 3" | 250 | 2000 | 76.2 | 119.7 | 0.78 | 25.4 | 0.83 |



MARK-321 Heat Shrinkable Wire Markers

Ordering: Please check availability. Standard colors are white and yellow. Other colors are available per request.

Part Number Example:

MARK-321(HW)-1/4-4-S1

- Length 2.0=2" S1.5=1.5" S1=1" S.66=66"
- Color (0-9) 0=BLK, 1=BRN, 2=RED, 3=ORN, 4=YLW, 5=GRN, 6=BLU, 7=PUR, 8=GRY, 9=WHT
- Inner diameter as supplied
- Thickness (HW if required)
- Shrink Ratio
- Product Type

