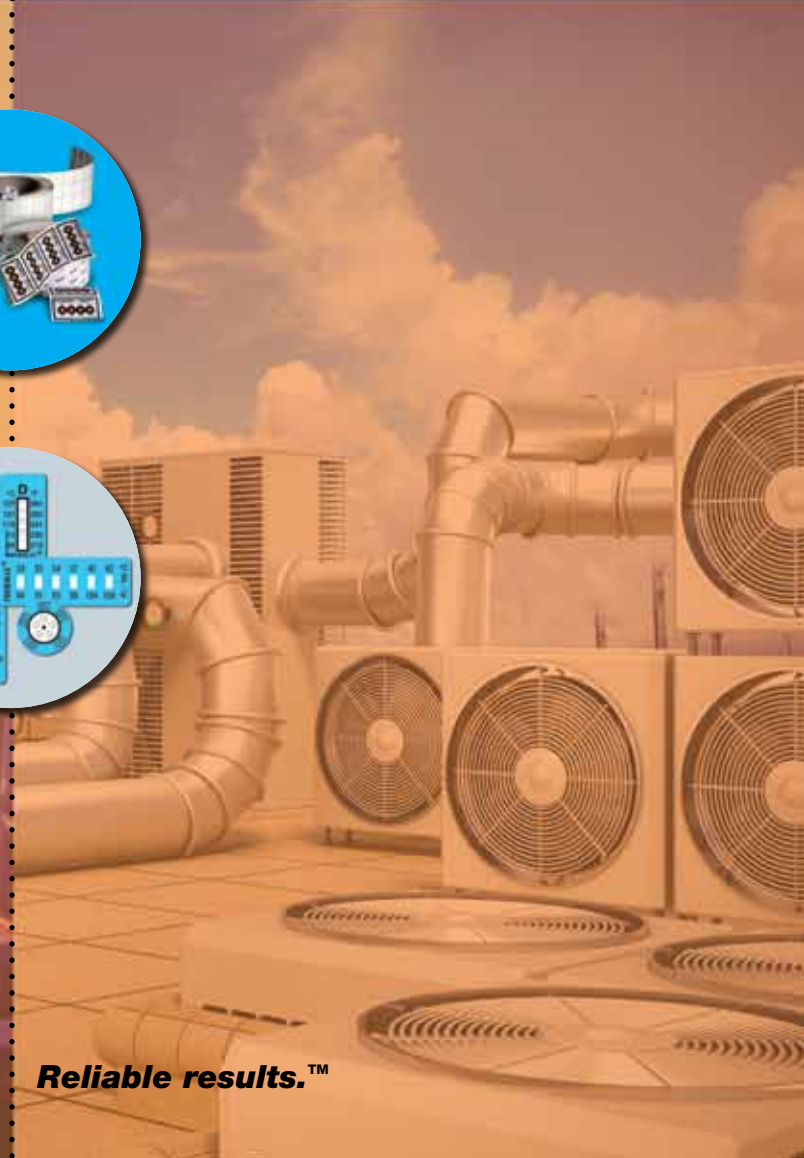
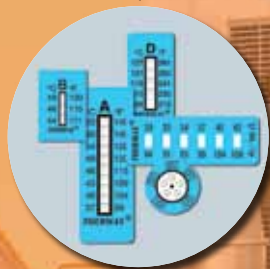




Temperature Indicating Labels



Accurate indication.

Reliable results.™

Since 1938, the Tempil® brand has been a multi-market leader in the development of innovative and accurate temperature indicating technology. At LA-CO Industries Inc., we understand the importance temperature monitoring plays in your operations. Tempilabel® and Thermax®* brands offer temperature indicating solutions that are simple to use, versatile and economical. Featuring an easy to use adhesive backing, our labels can be affixed to any surface quickly. Plus we offer multiple sizes, styles and temperature ranges designed to meet your specific temperature measurement needs. Whatever industry you are in, whatever application you have, we have a temperature indicating label for you.

* An LCR Hallcrest Brand

Benefits

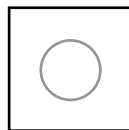
Accurate

Tempilabel and Thermax phase change temperature indicator labels are made of materials with melting points calibrated to a guaranteed accuracy of $\pm 2\%$. The label color changes to black, for irreversible labels, letting the user know when a preset minimum or maximum temperature has been reached.

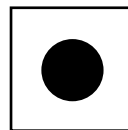
Easy to Use

Tempilabel and Thermax react within seconds, unlike a thermocouple or probe that must reach equilibrium with the surface and have to compensate for heat conducted away from the region being tested. Tempilabel and Thermax are in direct contact with the surface being measured; and easily show that the temperature has been reached.

EXAMPLE: Tempilabel Series 21



Rated temperature has not been reached.



Rated temperature has been reached at some point in time.

Cost Effective

When compared to other temperature monitoring methods, our labels require no set up, calibration or re-calibration periods. Tempilabel and Thermax labels are tamperproof and unlikely targets for theft.





Industrial Applications

Tempilabel® and Thermax® Temperature Indicating Labels have a wide variety of uses in quality control and preventive maintenance at all levels of the industrial channel.

Moving and Rotating Equipment:

- Motors, equipment, gearboxes
- Bearings, belt drives
- Dishwashers
- Wave Soldering

Fixed:

- Ovens
- Printed circuit boards
- Batteries

Case Study – Army Helicopter Pre-Flight Check

Since 1979 the United States Army has relied on Black Hawk Helicopters for combat and transport missions during conflicts in Grenada, Panama, Iraq, Somalia, the Balkans, Afghanistan, and other areas in the Middle East. The Black Hawk Helicopter is so reliable that it's earned the nick name "The Winged Workhorse". Tempil® Temperature Indicating Labels work to monitor the maximum temperatures reached on the helicopter hydraulic pumps. Checking the Tempilabel Series 4 is a critical step in every pre-flight visual checklist. A blackening of the Tempilabel boxes alerts the pilot and crew that the helicopter must not be flown until appropriate maintenance action has been taken. Tempil Temperature Indicating Labels are dependable in the most grueling conditions that the Black Hawk and its crews fly in.



Electrical Applications

Electrical parts can be especially heat sensitive; offering countless opportunities for Tempil and Thermax temperature indicating labels to contribute to minimizing temperature impact.

- Circuit breakers
- Lighting ballasts
- Thermal switches
- Internal electronic equipment temperature monitoring

Case Study – Circuit Breaker Temperature Monitoring

When a major poultry producer was losing valuable product due to electrical problems with their poultry ventilation system, they turned to Tempil for a perfect solution. Both poultry and eggs are vulnerable to overheating and maintaining proper ventilation is very important to producing market ready products. By placing a Tempilabel Series 21 single point temperature indicating label on each circuit breaker in their electrical panel the producer was able to identify heat incursions before they led to costly electrical shut downs of the ventilation system. The easy to read color change from white/silver to black alerts maintenance engineers to potential electrical problems allowing for a proactive fix without incurring valuable inventory loss.



Heat Sensitive Supply Chain Applications

Include Tempil® Temperature Indicating Labels as part of your design, planning, execution, control and monitoring of supply chain activities to help ensure product integrity for delivery to the final consumer in today's global marketplace.

- Medical Devices
- Medicine and Vaccines
- Metal and Plastic Products that lose integrity when exposed to high or low temperatures

Case Study – Supply Chain Temperature Monitoring

A key element in the successful rollout of a new diabetes test is ensuring the test not be exposed to temperatures above 120° F at any time during the supply chain. Tempil Temperature Indicating Labels are affixed to each test package and are easy to use. A color change from white/silver to black indicates that a temperature violation has occurred and the test must be discarded. Tempilabel® provides both the test manufacturer and the consumer a cost effective and reliable method of ensuring product quality.



HVAC Applications

Tempil Temperature Indicating Labels can play a key role in HVAC equipment maintenance. Simply use these labels on critical appliance parts and gauge whether the equipment has reached unsafe temperatures.

- Compressor discharge lines
- Steam traps
- Control boxes of commercial rooftop units

Case Study - Monitoring Refrigerator Compressor Overheating

While it's common knowledge that a leading cause of premature reciprocating compressor failure is overheating, temperature monitoring can pose a challenge. Because the hottest location in a refrigeration system is at the discharge port of the valve plate inside the compressor head, it is difficult to measure the exact temperature at this location. Placing a Series 21 Tempilabel single level temperature indicating label for 220° F (part number 26262) approximately six inches from the compressor outlet will give a good indication of the temperature at the discharge port. There will be approximately 50°F to 75°F degree drop in temperature between the discharge port and 6 inches out on the discharge line, so it's easy for a technician to know that a change in color from white/silver to black in the Tempilabel Series 21 indicates that the compressor is getting dangerously close to overheating. Including Tempilabels in a disciplined preventive maintenance program is a simple step to avoid complicated compressor failures.

Other Unique Temperature Monitoring Applications

Lighting ballasts

Automotive racing

Hobby remote control cars and planes

Fire sprinkler heads

Hot air balloons

Series 21 Tempilabel

One convenient temperature level per indicating label - various single temperatures available.

Size: 0.47" x 0.51" (12 mm x 13 mm)

Unit: Pack of 210 labels or rolls of 1,000 as indicated below.

Part Number		Temperature Range
Pack of 210	Roll of 1,000	
26250	26275	°F 100 °C 38
26251	26276	°F 110 °C 43
26252	26277	°F 120 °C 49
26254	26278	°F 130 °C 54
26255	26279	°F 140 °C 60
26256	26280	°F 160 °C 71
26257	26281	°F 170 °C 77
26258	26282	°F 180 °C 82
26259	26283	°F 190 °C 88
26260	26284	°F 200 °C 93
26261	26285	°F 210 °C 99
26262	26286	°F 220 °C 104
26263	26287	°F 230 °C 110
26264	26295	°F 240 °C 116
26265	26288	°F 250 °C 121
26266	26289	°F 260 °C 127
26267	26290	°F 270 °C 132
26268	26291	°F 280 °C 138
26269	26292	°F 290 °C 143
26270	26293	°F 300 °C 149
N/A	26273	°F 375 °C 191
26271	26294	°F 400 °C 204
26272	26296	°F 500 °C 260

Series 4 Tempilabel

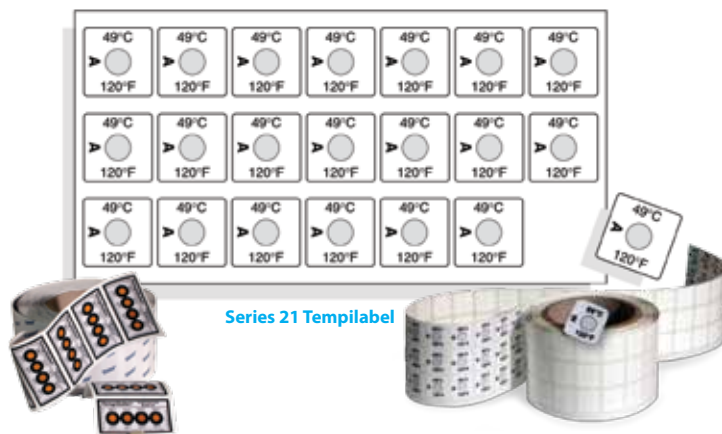
Four different temperature levels on one indicating label - various temperature ranges available.

Size: 0.91" x 1.77" (23 mm x 45 mm)

Unit: Pack of 10*

*Rolls of 500 may be available, contact LA-CO Industries, Inc. for details.

Part Number	Temperature Range
26700	°F 100 110 120 130 °C 38 43 49 54
26709	°F 120 130 140 150 °C 49 54 60 66
26701	°F 130 140 150 160 °C 54 60 66 71
26702	°F 170 180 190 200 °C 77 82 88 93
26703	°F 190 200 210 220 °C 88 93 99 104
26704	°F 220 230 240 250 °C 104 110 116 121
26710	°F 270 280 290 300 °C 132 138 143 149
26705	°F 330 340 350 360 °C 166 171 177 182
26706	°F 125 150 175 200 °C 52 66 79 93
26707	°F 100 150 200 250 °C 38 66 93 121
26708	°F 200 250 300 350 °C 93 121 149 177



Series 21 Tempilabel

Series 4 Tempilabel

Tempilabel Reversible

Seven different temperature levels on one indicating label - various temperature ranges available. Temperature indications are not permanent - indications can change as temperatures fluctuate.

Size: 0.51" x 1.73" (13 mm x 44 mm) / Unit: Pack of 10

Part Number	Temperature Range
26900	°F 32 41 50 59 68 77 86 °C 0 5 10 15 20 25 30
26901	°F 86 95 104 113 122 131 140 °C 30 35 40 45 50 55 60
26902	°F -22 -13 -4 5 14 23 32 °C -30 -25 -20 -15 -10 -5 0
26903	°F 140 149 158 167 176 185 194 °C 60 65 70 75 80 85 90
26904	°F 194 203 212 221 230 239 248 °C 90 95 100 105 110 115 120





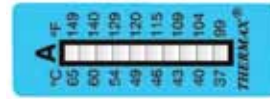
Thermax Clock Indicators



Thermax 5 Level



Thermax 6 Level



Thermax 8 Level



Thermax 10 Level

Thermax 5 Level Clock Style Indicators

Size: 0.55" diameter (14 mm) / Unit: Pack of 10

Part Number	Temperature Range
26001	°F 105 110 115 120 130
	°C 40 43 46 49 54
26002	°F 140 150 160 170 180
	°C 60 65 71 77 82
26003	°F 190 200 210 220 230
	°C 88 93 99 104 110
26004	°F 240 250 260 270 280
	°C 116 121 127 132 138
26005	°F 290 300 310 320 330
	°C 143 149 154 160 166
26006	°F 340 350 360 370 380
	°C 171 177 182 188 193
26007	°F 390 400 410 420 435
	°C 199 204 210 216 224
26008	°F 450 465 480 490 500
	°C 232 241 249 254 260

Thermax 5 Level Strips

Size: 0.7" x 1.53" (18 mm x 39 mm) / Unit: Pack of 10

Part Number	Temperature Range
26535	°F 84 91 93 99 104
	°C 29 33 34 37 40
26517	°F 99 104 109 111 115
	°C 37 40 42 44 46
26519	°F 120 129 140 149 160
	°C 49 54 60 65 71
26521	°F 171 180 190 199 210
	°C 77 82 88 93 99
26523	°F 219 230 241 250 261
	°C 104 110 116 121 127
26525	°F 270 280 289 300 309
	°C 132 138 143 149 154
26527	°F 320 331 340 351 360
	°C 160 166 171 177 182
26529	°F 370 379 390 399 410
	°C 188 193 199 204 210
26531	°F 421 435 450 466 480
	°C 216 224 232 241 249
26533	°F 480 489 500 536 554
	°C 249 254 260 280 290

Thermax 10 Level Strips

Size: 0.7" x 2.0" (18 mm x 51 mm) / Unit: Pack of 10

Part Number	Temperature Range
26100	°F 104 108 111 115 120 129 140 144 149 160
	°C 40 42 44 46 49 54 60 62 65 71
26103	°F 171 180 190 199 210 219 230 241 250 261
	°C 77 82 88 93 99 104 110 116 121 127
26105	°F 270 280 289 300 309 320 331 340 351 360
	°C 132 138 143 149 154 160 166 171 177 182
26107	°F 370 379 390 399 410 421 435 450 466 480
	°C 188 193 199 204 210 216 224 232 241 249

Thermax 6 Level Strips

Size: 0.47" x 1.26" (12 mm x 32 mm) / Unit: Pack of 10

Part Number	Temperature Range
26601	°F 84 91 93 99 104 108
	°C 29 33 34 37 40 42
26603	°F 111 115 120 129 140 144
	°C 44 46 49 54 60 62
26605	°F 149 160 171 180 190 199
	°C 65 71 77 82 88 93
26608	°F 210 219 230 241 250 261
	°C 99 104 110 116 121 127
26610	°F 270 280 289 300 309 320
	°C 132 138 143 149 154 160
26612	°F 331 340 351 360 370 379
	°C 166 171 177 182 188 193
26614	°F 390 399 410 421 435 450
	°C 199 204 210 216 224 232
26616	°F 466 480 489 500 536 554
	°C 241 249 254 260 280 290

Thermax 8 Level Strips

Size: 0.7" x 2.0" (18 mm x 51 mm) / Unit: Pack of 10

Part Number	Temperature Range
26801	°F 99 104 109 115 120 129 140 149
	°C 37 40 43 46 49 54 60 65
26803	°F 160 171 180 190 199 210 219 230
	°C 71 77 82 88 93 99 104 110
26805	°F 241 250 261 270 280 289 300 309
	°C 116 121 127 132 138 143 149 154
26807	°F 320 331 340 351 360 370 379 390
	°C 160 166 171 177 182 188 193 199

Thermax 9 Level Strip

Size: 0.7" x 2.0" (18 mm x 51 mm) / Unit: Pack of 10

Part Number	Temperature Range
26809	°F 399 410 421 435 450
	°C 204 210 216 224 232
	°F 466 480 489 500
	°C 241 249 254 260

Thermax Chill Checker

Size: 1.25" diameter x 0.23" deep

(31.75 mm diameter x 5.84 mm deep) / Unit: Pack of 10

Part No.	Temp Range	Part No.	Temp Range
26009	°F 41	26010	°F 63
	°C 5		°C 17

Labels should be stored under dry conditions at ambient temperature. Certain Tempilabel products may require overnight delivery with the addition of an ice pack. This shipping method is only used when the product integrity may be threatened by hot climates. Many orders for Tempilabel products are shipped via standard methods.



LA-CO Industries, Inc.

1201 Pratt Blvd. • Elk Grove Village, IL 60007
 800-621-4025 • 847-956-7600 • Fax: 847-956-9885
 tempil.com • email: customer_service@laco.com

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LA-CO Industries Europe SAS

Allée des Combes
 Pl de la Plaine de l'Ain 01150 BLYES France
 +33 (0) 4 74 46 23 23 • info@eu.laco.com



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