

NORYL™ V0 RESINS: SABIC'S BREAKTHROUGH FOR THE NEXT-GEN PV COMPONENTS



POWERING THE FUTURE OF SOLAR ENERGY

The solar PV industry is scaling at record speed — but microinverters must become smaller, more reliable, longer lasting, and more affordable. SABIC's NORYL V0 resins can help deliver the breakthrough the industry has been waiting for.

AN AWARD-WINNING SOLUTION

NORYL V0150TW (laser-absorptive) and V0150IR2 (laser-transmissive) resins are the first laser-weldable thermoplastics engineered specifically for PV microinverters, enabling:

- SMALLER, THINNER PARTS **DOWN TO 1.5 MM**
- **UP TO 40%** SPACE REDUCTION
- **UP TO 35%** LESS WEIGHT
- **UP TO 30%** MATERIAL SAVINGS
- OUTDOOR PERFORMANCE FOR **UP TO 15 YEARS**



SCAN & WATCH
THE VIDEO



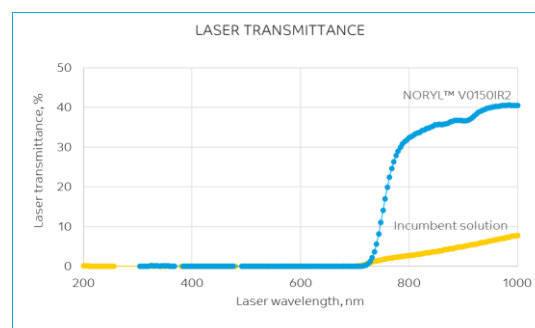
NORYL™ V0 RESINS: MATERIAL SCIENCE & PERFORMANCE

LASER WELDING FOR FASTER, CLEANER, MORE EFFICIENT PRODUCTION

Laser weldability and long term weatherability are traditionally conflicting properties. Through advanced polymer engineering, SABIC can help deliver both—without compromise.

NORYL V0 resins can help enable rapid parts consolidation through laser welding:

- SILICA-GEL-FREE DESIGNS
- HIGH MECHANICAL INTEGRITY UP TO 150°C
- ASSEMBLY IN ~60 SECONDS (VS. HOURS FOR TRADITIONAL PROCESSES)
- LOWER SYSTEM COST THROUGH SIMPLIFIED MANUFACTURING
- ALSO MAY BE SUITABLE FOR: JUNCTION BOXES, SOLAR TRACKER BOX AND EV REFRIGERANT DETECTOR BOX



Laser transmittance at wavelength from 200 to 1024nm, 2mm wall thickness.

NORYL V0150IR2 resin demonstrates excellent laser transmittance and long-term weatherability.

HIGH PERFORMANCE MATERIAL ATTRIBUTES

NORYL V0150TW RESIN (laser-absorptive)

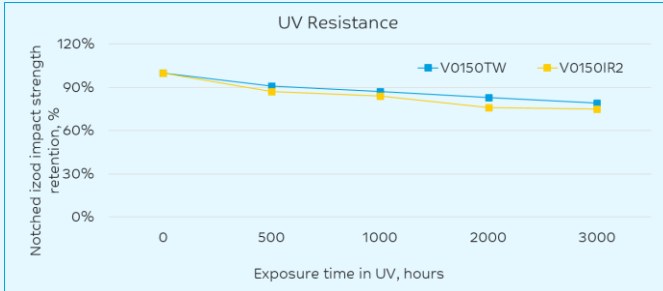
- 1.5 mm 5VA and 1.0 mm V0 flame retardancy
- HDT 150°C, RTI 110/105/115°C
- CTI PLC2, f1 outdoor rating
- Excellent UV and humidity resistance

NORYL V0150IR2 RESIN (laser-transmissive)

- >30% laser transmission at 980 nm (2 mm)
- 2.0 mm 5VA and 1.0 mm V0 flame retardancy
- HDT 150°C, RTI 110/105/115°C
- CTI PLC2, f1 outdoor rating
- Engineered for long-term weatherability

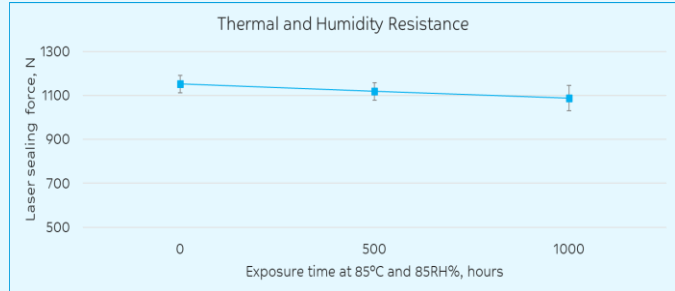
NORYL™ V0 RESIN: DURABILITY & COMPARATIVE ADVANTAGES

BUILT TO LAST



UV & ENVIRONMENTAL PERFORMANCE

NORYL™ V0150TW and V0150IR2 retain high impact strength after 3000 hours of UV exposure — exceeding f1 certification requirements.



HUMIDITY & THERMAL AGING

Strong laser sealing force retention after 1000 hours at 85°C / 85% RH.

THESE ADVANTAGES TRANSLATE INTO LIGHTER, SMALLER, MORE RELIABLE MICROINVERTERS WITH LOWER SYSTEM COST.

COMPARATIVE ADVANTAGES

Compared to PC and incumbent PPE materials, NORYL™ V0 resins offer:

HIGHER PRODUCTION EFFICIENCY | SUPERIOR HYDROLYTIC RESISTANCE | BETTER UV STABILITY

LOWER DENSITY (1.1 G/CM³) | THINNER 5VA CAPABILITY (1.5 MM FOR TW, 2.0 MM FOR IR2)

PROPERTIES	NORYL™ V0150IR2 RESIN (LASER TRANSMISSIVE)	NORYL™ V0150TW RESIN (LASER ABSORPTION)	PC	INCUMBENT PPE
Laser weldable	Yes	Yes	No	No
Silica gel free design	Yes	Yes	No	No
Production efficiency (for PV microinverters)	High	High	Low	Low
System cost	Low	Low	High	High
Weathering resistance	High	High	Medium	High
Hydrolytic resistance	High	High	Low	High
UV resistance	High	High	Medium	High
UL94 V0 thickness, mm	1.0	1.0	0.8	0.75
UL94 5VA thickness, mm	2.0	1.5	3.0	2.5
Microinverter thickness (determined by 5VA rating)	2.0	1.5	3.0	2.5
Density, g/cm ³	1.1	1.1	1.2	1.1
IPT*, V	2000	2000	1500	1500
HDT**, °C	146	149	134	130

* Tested by ASTM D2303; ** Tested at 0.45MPa by ASTM D648.

BEYOND MATERIALS

TRY, TEST AND VALIDATE WITH US

We offer world-class application technology support to help you choose FR materials for electrical applications. For technical assistance, SABIC's Fire & Electrical Center of Excellence offers customers a wide range of test capabilities including:

- Glow Wire Ignition Test - IEC 60695-2
- Comparative tracking Index - IEC 60112 / ASTM D3638-12
- UL 94, 5V and HB
- OSU Heat Release - FAR 25.853 Chapter 5, ASTM E906, E906M
- FTIR Toxicity - ISO 19702-2015E
- Cone calorimeter - ISO 5660 / ASTM E1354



We don't just supply materials;
we partner in innovation.

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SABIC MATERIAL FINDER
Find the right Specialties material
for your application ►



NORLYL RESINS

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