Cybrid History – from Japan to China

**History Summary:**
- Commenced in 2005 as Macropoly Laboratory in Kyoto Japan
- Development focus on Advanced Functional Polymer Materials
- Capital infusion in 2008 by Legend Holdings
- Expanded operations to Suzhou, China as Cybrid Technologies
- Manufacturing initiated in 2010
- By 2013, KPE was transitioned to KPf by Canadian, Trina and JA Solar
- Largest backsheet supplier 2014-2016
- Expanding portfolio of “Product Innovation through Collaboration”

Cybrid Technologies has long history of product development by meeting complex engineering demands through valued performance and long-term durability requirements. Many new products have been commercialized since company’s inception.
Backsheet Innovation

- **TPT/KPK**
  - UV Blocking (outer layer)
  - low water vapor transmission rate
  - thermal stability (inner layer)
  - heat dissipation
  - partial discharge
  - Reliability
  - Cost

- **TPE/KPE**
  - UV Blocking (outer layer)
  - low water vapor transmission rate
  - thermal stability (inner layer)
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- **KPf**
  - UV Blocking (outer layer)
  - low water vapor transmission rate
  - thermal stability (inner layer)
  - heat dissipation
  - partial discharge
  - reliability
  - Cost

**Customer Driven**
- Low cost

**Market Driven**
- High quality

- **Weatherability**
  - outer layer
  - inner layer

- **UV Blocking**
  - outer layer
  - inner layer

- **Reliability**
  - Cost

- **Heat Dissipation**

- **Low Water Vapor Transmission Rate**

- **Partial Discharge**

- **Cost**

- **Customer Driven**
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Innovation Partnerships
Cybright Encapsulant Series

Polyolefin Elastomer (POE)  Ethylene Vinyl Acetate (EVA)  Thermoplastic Olefin (TPO)

1. Cybright® T: High transparency >90%
2. Cybright® C: Transparent, UV light cut-off @370 nm (50% TT)
3. Cybright® W: White, high reflectivity 95% @450 nm
4. Cybright® U: UV light conversion, enhanced power output (R&D)

- Improved PID
- High WVTR
- Acetic acid free
- Improved thermo-mechanical properties
- Available as T, C & W

- Industry standard
- PID Resistant
- Faster lamination
- Maximized cost
- Available as T, C & W

- Chemical inertness
- Improved PID
- Fast lamination
- High insulation resistance
- Available as T
Global Customer Base
Versatile & Expanding Product Portfolio

Cynagard Backsheets

Ultra-Thin Adhesive Tapes for Electronics Assembly:
- Graphite Sheet attachment
- Reflective sheet fixing
- Optical waveguide alignment

Cybright Encapsulants

1. Cybright® T: High transparent
2. Cybright® C: Transparent, UV light cutoff
3. Cybright® W: White, high reflectivity

CYTHERM Series Heat Sink & TIM Films

Insulation Films

Conductive Ribbon

Laminated Bus Bar Film & Tapes

Edge Tape GF-3200: Single sided PSA based PVC film for edge isolation and moisture protection for dual glass and thin film PV modules with WVTR <0.5 g/m2.day

Cybrid product is certified by BusBar processing factory- China South Locomotive & Rolling Stock (CSR), and Shenzhen BUSBAR for inverter manufacturers such as Sungrow and HUAWEI.