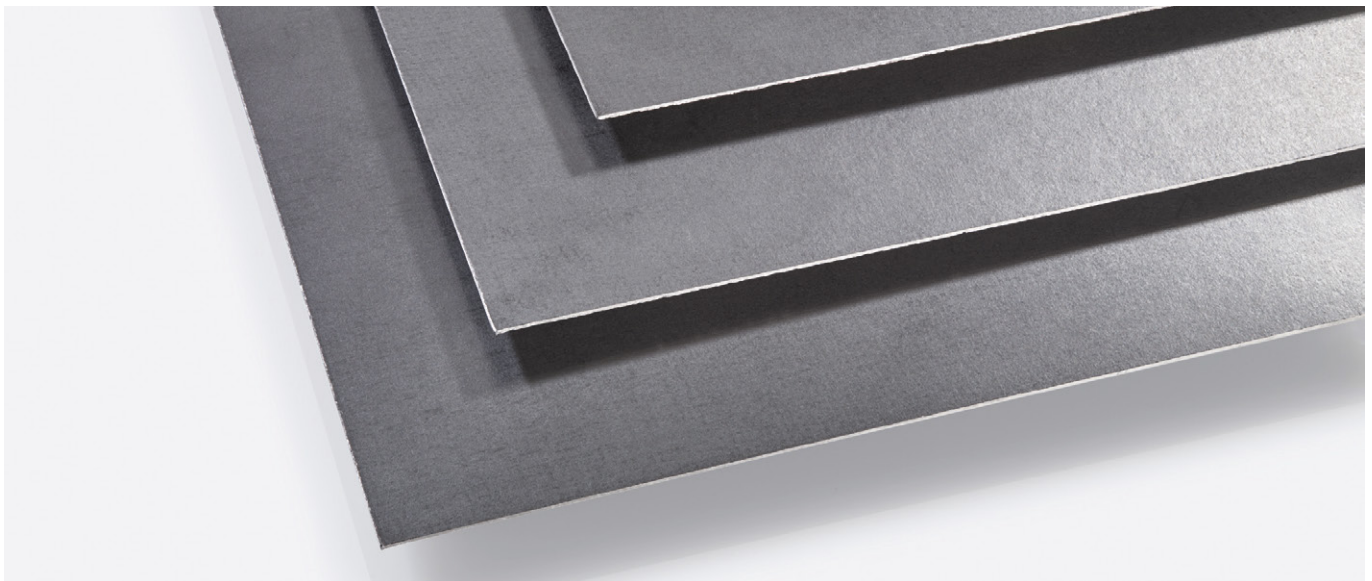


# SIGRACELL<sup>®</sup> bipolar plate

Graphite composite materials for bipolar plates



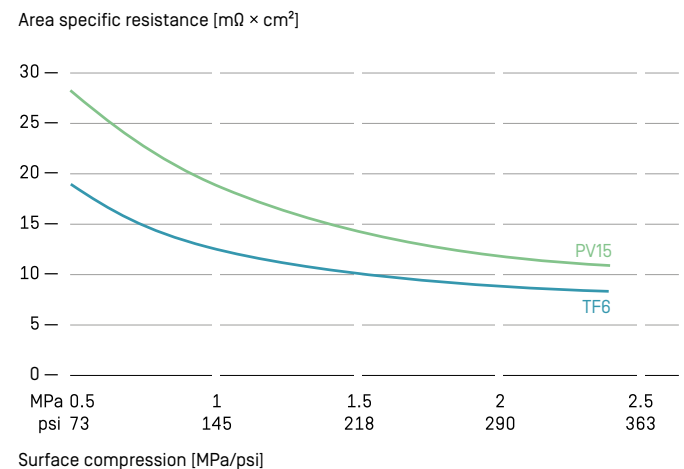
↑ SIGRACELL bipolar plates made of graphite composite material

SIGRACELL bipolar plates, which are mainly produced from expanded natural graphite, are used in flow batteries and fuel cells. Furthermore, SIGRACELL suits for other electrochemical applications. SIGRACELL is the best material for ambitious cell chemistry.

### Properties

- Good electrical conductivity
- High chemical resistance
- Light weight
- Available in large dimensions

### Typical area specific electrical resistance perpendicular to surface



## Material data of SIGRACELL® bipolar plates

| Typical properties  | Units                                   | TF6                    | PV15                   |
|---|---|------------------------|------------------------|
| Polymer type  |   | Fluoropolymer          | Fluoropolymer          |
| Polymer content   | %                                       | 6                      | 15                     |
| Density   | g/cm <sup>3</sup> (lb/ft <sup>3</sup> ) | 1.75 (110)             | 1.75 (110)             |
| Thickness   | mm (in)                                 | 0.6 (0.024)            | 0.6 (0.024)            |
| Tensile strength (ASTM F152D)   | MPa (psi)                               | 20 (2900)              | 25 (3600)              |
| Compressive strength (ASTM F1574)   | MPa (psi)                               | 140 (20300)            | 160 (23200)            |
| Electrical resistivity parallel to surface  | Ωμm                                     | 7                      | 7                      |
| Electrical resistivity perpendicular to surface at 1 MPa compression load <sup>1)</sup> | Ωμm                                     | 2000                   | 3000                   |
| Thermal conductivity parallel to surface  | W/(Km)                                  | 350                    | 300                    |
| Permeability of helium at 1 barg (14.5 psig)  | mg/(s × m <sup>2</sup> )                | < 1 × 10 <sup>-3</sup> | < 1 × 10 <sup>-3</sup> |
| Permeability of helium at 1 barg (14.5 psig)  | mbar × l/s                              | < 1 × 10 <sup>-5</sup> | < 1 × 10 <sup>-5</sup> |
| Total impurities  | ppm                                     | < 150                  | < 150                  |

<sup>1)</sup> The electrical resistivity perpendicular to surface at 1 MPa compression load is calculated from the through-plane area specific electrical resistance at 1 MPa compression load, determined according internal SGL Carbon standard based on DIN 51911. For through-plane area specific electrical resistance as a function of compression load please see graph.

Die cut parts available on request. For any engineering/design purposes please always contact our technical sales team.

Unless stated otherwise, all values are valid at room temperature, typical, non-binding and subject to change.



Graphite Solutions | SGL CARBON GmbH | SGL Technic LLC  
 Sales Europe/Middle East/Africa | sigracell-europe@sglcarbon.com  
 Sales Americas | sigracell-americas@sglcarbon.com  
 Sales Asia/Pacific | sigracell-asia@sglcarbon.com  
 www.sigracell.com | www.sglcarbon.com

### TDS BP.06

05 2024/0 6NÄ Printed in Germany  
 ®registered trademarks of SGL Carbon SE

This information is based on our present state of knowledge and is intended to provide general notes on our products and their uses. It should therefore not be construed as guaranteeing specific properties of the products described or their suitability for a particular application. Any existing industrial property rights must be observed. The quality of our products is guaranteed under our "General Conditions of Sale".