

# **APS19 Graphite Anode Powders**

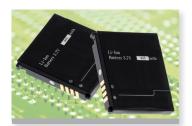
Technical Data Sheet 2001

## APS19: Best in Class High Performance Anode

- Exceptional retained capacity after elevated temperature storage
- Excellent high temperature performance
- High rate capability
- Superior coatability & processability

### **Typical Applications**

- Automotive
- Consumer electronics
- Power tools
- Renewable energy storage





#### **Available Container Sizes**

- 5kg increments up to 200kg
- Bulk packaging

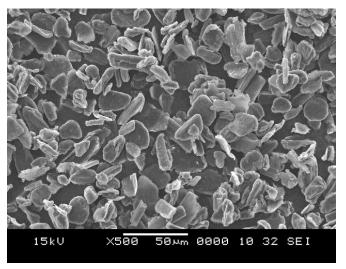
### **Typical Properties\***

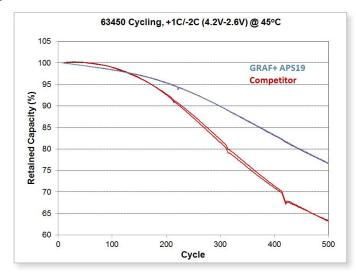
Characteristic	Unit	APC19	APS19	APN13
Capacity**	mAh/g	≥354	≥356	≥370
First Cycle Efficiency	%	≥94	≥92	≥92
Retained Capacity @ 23°C (after 500 cycles)***	%	96	96	95
Tap Density	g/cc	>0.9	>0.9	>0.9
D10	μm	10.0	9.6	8.2
D50	μm	19.4	19.0	13.0
D90	μm	30.8	30.7	21.1
Ash	ppm	<35	<35	<45

<sup>\*</sup> Properties listed are typical and cannot be used as accept/reject specifications.

<sup>\*\*</sup> Half cell data with Li counter electrode. Reported number is the average of the first 3 cycles. All cells are constructed with PVDF binder.
\*\*\* Full cell construction is prismatic 63450 with NCM cathode.

#### **APS19: Best in Class High Performance Anode**





- Exceptional retained capacity after elevated temperature storage
- Excellent high temperature performance
- High rate capability
- Superior coatability & processability

#### **GrafTech is Graphite**

GrafTech International is a global company that has been redefining limits for more than 125 years. We offer innovative graphite material solutions for our customers in a wide range of industries and end markets, including steel manufacturing, advanced energy and latest generation electronics. GrafTech operates 20 principal manufacturing facilities on four continents and sells products in over 70 countries. Headquartered in Parma, Ohio, GrafTech employs 3,000 people.

#### **Redefining Technology**

From the development of the first electric arc lamp to the cutting edge technology of electronic thermal management, GrafTech's history and world-renowned Research & Development center underscores its commitment to innovating and manufacturing engineered solutions across all the industries it serves.

- 730+ issued and pending patent applications
- 16 R&D 100 Awards recognizing groundbreaking technology
- 125+ scientists, engineers and R&D professionals
- Extensive testing facilities and capabilities
- Equipment to duplicate or simulate process technology
- Lean manufacturing expertise



www.graftech.com | graf+@graftech.com

United States of America 101 N. Philippi Pike Anmoore, WV 26323-0120 Ph: +1-800-842-8805 +1-304-624-1253

China
Unit 2104 of International Capital Plaz
1318, Sichuan Road North
Hongkou District, Shanghai China
Ph. +86-21-6325-8018

Italy
Via Forno Allione, 2
1-25040 Malonno, Brescia, Ital
Ph: +39-036-463-0131

France
La Lechere
73264 Aigueblanche Cedex, France
Ph: +33.4.79.41.45.00

**Redefining limits** 

2014 Graffech International Holdings Inc. This information is based on data believed to be reliable but Graffech makes no warranties, express or implied, as to its accuracy and assumes no liability arising out of suse. The data listed falls within the normal range of product properties but should not be used to establish specification limits or used alone as the basis of design. Graffech's liability to purchasers is expressly mited to the terms and conditions of sale. GRAF+ is a trademark of Graffech International Holdings Inc.