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LATHAM & WATKINS

October 25, 2017

BY HAND DELIVERY

The Honorable Lisa R. Barton
Secretary to the Commission
U.S. International Trade Commission
500 E Street, S.W., Room 112
Washington, DC 20436

LP	DOCKET NUMBER
3269	
Office of the Secretary Int'l Trade Commission	

Re: *Certain Batteries and Electrochemical Devices Containing Composite Separators, Components Thereof, and Products Containing Same*

Dear Secretary Barton:

Enclosed for filing on behalf of LG Chem, Ltd., LG Chem Michigan Inc., LG Chem Power Inc., and Toray Industries, Inc. (collectively "Complainants"), are documents in support of Complainants' request that the Commission commence an investigation pursuant to section 337 of the Tariff Act of 1930, as Amended. Pursuant to the Commission Rules of Practice and Procedure, a request for confidential treatment of Confidential Exhibits 26-40 is concurrently being transmitted with this filing. Enclosed are the following:

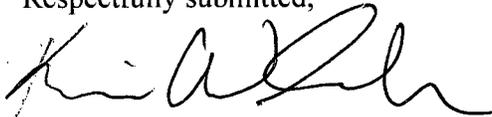
1. an original and eight (8) paper copies of the verified complaint and Statement of Public Interest (Rules 210.8(a)(1)(i) and 210.8(b));
2. one (1) CD containing the accompanying non-confidential exhibits to the Complaint (Rules 210.4(f) and 210.8(a));
3. one (1) CD containing the accompanying Confidential Exhibits 26-40 to the Complaint (Rules 201.6(c), 210.4(f) and 210.8(a));
4. five (5) additional paper copies of the Complaint and five (5) additional CDs containing accompanying non-confidential exhibits to the Complaint for service upon proposed Respondents Amperex Technology Limited, DJI Technology Co., Ltd., DJI Technology, Inc., Guangdong OPPO Mobile Telecommunications Corp., Ltd. and OPPO Digital, Inc. (Rule 210.8(a));
5. five (5) additional CDs containing accompanying confidential exhibits to the Complaint for service upon proposed Respondents Amperex Technology Limited,

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- DJI Technology Co., Ltd., DJI Technology, Inc., Guangdong OPPO Mobile Telecommunications Corp., Ltd. and OPPO Digital, Inc. (Rule 210.8(a));
6. one (1) additional paper copy of the Complaint for service upon the Embassy of The People's Republic of China (Rules 210.8(a) and 210.11(a));
 7. original certified copies of U.S. Patent Nos. 7,662,517 ("the '517 patent"), 7,638,241 ("the '241 patent") and 7,709,152 ("the '152 patent") (legible copies of the patents are included in the Complaint as Exhibits 1-3 respectively (Rule 210.12(a)(9)(ii));
 8. original certified copies of assignments for the '517, '241 and '152 patents (legible copies of the assignments are included in the Complaint as Exhibit 4 (Rule 210.12(a)(9)(ii));
 9. original certified copies and three (3) additional copies (on CD) of the prosecution histories for the '517, '241 and '152 patents (Appendices A, C and E) (Rule 210.12 (c)(2));
 10. four (4) copies (on CD) of each technical reference mentioned in the prosecution histories of the '517, '241 and '152 patents (Appendices B, D and F); and
 11. a letter and certification pursuant to Commission Rules 201.6(b) and 210.5(d) requesting confidential treatment of Confidential Exhibits 26-40.

Thank you for your attention to this matter.

Respectfully submitted,



Kevin C. Wheeler
of LATHAM & WATKINS LLP

Counsel for Complainants LG Chem, Ltd., LG Chem Michigan Inc., LG Chem Power Inc., and Toray Industries, Inc.

Enclosures

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October 25, 2017

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The Honorable Lisa R. Barton
Secretary to the Commission
U.S. International Trade Commission
500 E Street, S.W., Room 112
Washington, DC 20436

Re: *Certain Batteries and Electrochemical Devices Containing Composite Separators, Components Thereof, and Products Containing Same*

Dear Secretary Barton:

I am counsel to LG Chem, Ltd., LG Chem Michigan Inc., LG Chem Power Inc., and Toray Industries, Inc. (collectively "Complainants"). In accordance with Commission Rules 201.6 and 210.5, Complainants request confidential treatment of business information contained in Confidential Exhibits 26-40 to the Complaint.

The information for which confidential treatment is sought is proprietary commercial and technical information not otherwise publicly available. Specifically, the exhibits contain the following:

Confidential Exhibit 26: Declaration Regarding Domestic Industry, which contains proprietary business information that is not publicly available.

Confidential Exhibit 27: Declaration Regarding Domestic Industry, which contains proprietary business information that is not publicly available.

Confidential Exhibit 28: Claim Chart demonstrating LGC's practice of the '517 patent, which contains proprietary business information that is not publicly available.

Confidential Exhibit 29: Claim Chart demonstrating LGC's practice of the '241 patent, which contains proprietary business information that is not publicly available.

Confidential Exhibit 30: Claim Chart demonstrating LGC's practice of the '152 patent, which contains proprietary business information that is not publicly available.

Confidential Exhibit 31: Claim Chart demonstrating LGC's practice of the '517 patent, which contains proprietary business information that is not publicly available.

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Confidential Exhibit 32: Claim Chart demonstrating LGC's practice of the '241 patent, which contains proprietary business information that is not publicly available.

Confidential Exhibit 33: Claim Chart demonstrating LGC's practice of the '152 patent, which contains proprietary business information that is not publicly available.

Confidential Exhibit 34: Patent Agreements, which contains proprietary business information that is not publicly available.

Confidential Exhibit 35: LGC Specifications for P2.7 Cell, which contains proprietary business information that is not publicly available.

Confidential Exhibit 36: LGC Recipe for P2.7 Cell, which contains proprietary business information that is not publicly available.

Confidential Exhibit 37: LGC Specifications for A7 Cell, which contains proprietary business information that is not publicly available.

Confidential Exhibit 38: LGC Specifications for Separator Specifications for LGC A7 Cell 7 Cell, which contains proprietary business information that is not publicly available.

Confidential Exhibit 39: LGC Operation Standard for A7 Cell, which contains proprietary business information that is not publicly available.

Confidential Exhibit 40: Identification of licensees, which contains proprietary business information that is not publicly available.

The information described above qualifies of confidential business information pursuant to Rule 201.6(a) in that:

- a) it is not available to the public;
- b) unauthorized disclosure of such information could cause substantial harm to the competitive position of Complainants; and
- c) the disclosure of which could impair the Commission's ability to obtain information necessary to perform its statutory function.

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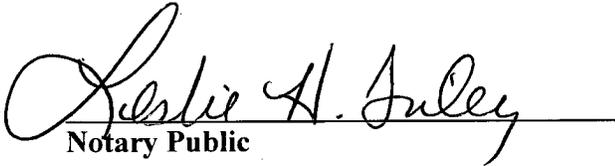
Respectfully submitted,



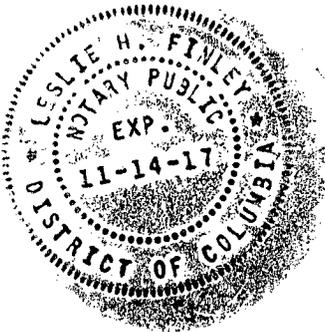
Kevin C. Wheeler
of LATHAM & WATKINS LLP

*Counsel for Complainants LG Chem, Ltd., LG
Chem Michigan Inc., LG Chem Power Inc., and
Toray Industries, Inc.*

SUBSCRIBED AND SWORN to before me this 25th day of October, 2017.



Notary Public



LESLIE H. FINLEY
NOTARY PUBLIC DISTRICT OF COLUMBIA
My Commission Expires November 14, 2017

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C. 20436**

In the Matter of

**CERTAIN BATTERIES AND
ELECTROCHEMICAL DEVICES
CONTAINING COMPOSITE
SEPARATORS, COMPONENTS
THEREOF, AND PRODUCTS
CONTAINING SAME**

**Investigation
No. 337-TA-___**

COMPLAINANTS' STATEMENT ON THE PUBLIC INTEREST

Pursuant to U.S. International Trade Commission (“Commission”) Rule 210.8(b) and 19 C.F.R. § 210.8(b), Complainants LG Chem, Ltd., LG Chem Michigan, Inc., LG Chem Power, Inc., and Toray Industries, Inc. (collectively, “LGC”) respectfully submit this Statement on the Public Interest concurrently with the above-captioned Complaint.

The products accused in the Complaint are batteries and electrochemical devices containing composite separators, components thereof, and products containing same that infringe LG Chem’s patented Safety Reinforce Separator (“SRS”) technology (“Accused Products”). LGC seeks limited exclusion orders and cease-and-desist orders covering the Accused Products against Amperex Technology Limited (“ATL”), DJI Technology Co., Ltd., DJI Technology, Inc., Guangdong OPPO Mobile Telecommunications Corp., Ltd. and Oppo Digital, Inc (collectively, “Respondents”).

Issuance of the relief requested will not adversely affect the public health, safety, or welfare conditions in the United States, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, or United States consumers. In this case, the requested remedial orders are in accord with the public interest for at least the

following reasons: (1) exclusion of the accused devices and products will not have an adverse effect on the public health or welfare as those issues are defined by the Commission; (2) only a small subset of the industry selling or offering for sale the Accused Products in the United States would be barred; and (3) LGC and numerous third parties are readily available to fill any unmet demand caused by the requested remedial orders within a commercially reasonable time. Further, the Commission has long recognized that there is a strong public interest in protecting intellectual property rights. *Certain Baseband Processor Chips and Chipsets, Transmitter and Receiver (Radio) Chip, Power Control Chips*, Inv. No. 337-TA-543, USITC Pub. 4258 (Oct. 2011) (“*Baseband Processor Chips*”). As such, the public interest in protecting LGC’s intellectual property rights outweighs any potentially adverse impact on the public, and this Investigation does not present an instance where the Commission, the parties, and the public should be required to undergo the time and expense of discovery and trial for a Recommended Determination by the ALJ regarding the public interest.

A. Use Of Articles Potentially Subject To Remedial Orders In The United States

The articles potentially subject to exclusion include batteries and electrochemical devices containing composite separators, components thereof, and products containing same. Such batteries are most frequently used in portable consumer electronics, though they have growing applications in the automotive industry.¹ Batteries containing LGC’s SRS technology are present in various consumer electronics currently available in the United States, including cell phones, laptops, tablets, smart watches, headphones, power tools, home appliances, and recreational drone aircraft. Specific instances of products that include infringing battery technology include, but are

¹ See <http://www.grandviewresearch.com/industry-analysis/lithium-ion-battery-market/> (projecting significant growth in lithium-ion battery production in the U.S. market due to growth in electric vehicle and consumer electronics sales).

not limited to, ATL cells used in DJI Technology, Inc's ("DJI") Phantom 3 drone, OPPO Digital, Inc's ("OPPO") HA-2SE headphone amplifier, and OPPO's Mirror 5s smartphone.

B. There Are No Public Health, Safety, Or Welfare Concerns With The Requested Remedial Orders

The requested remedial orders will not give rise to any public health, safety, or welfare concerns in the United States. First, as noted above, products containing batteries with the accused SRS technology are generally used by United States consumers for electronic communication, mobile entertainment, commercial transactions, and other professional and recreational purposes.

Second, to the extent batteries containing LGC's SRS technology are present in products used in public health, safety, and welfare, there are numerous alternative batteries offered by LGC and other battery producers. The lithium-ion market is "highly competitive,"² with many sophisticated companies capable of providing alternative batteries, including Panasonic, Samsung SDI, Hitachi Maxell, Toshiba, Johnson Controls, GS Yuasa, and AESC.³ Due to this large number of market participants, any reduction in demand caused by the remedial orders could rapidly be met. Likewise, LGC and other market participants can readily supply replacement batteries for downstream products incorporating infringing lithium-ion batteries.

Third, the remedial orders would have no significant effect on the markets for downstream products. By way of example, the cell phone market in the United States is competitive, dynamic, and fast-moving. Multiple companies hold a significantly greater market share than OPPO: Apple, Samsung, LG, Motorola, and HTC combine for approximately 90% of the market.⁴ Thus, in the unlikely event that OPPO could not find a non-infringing alternative to the batteries in its products

² See <https://www.transparencymarketresearch.com/pressrelease/lithium-ion-battery-market.htm>.

³ See *id.*

⁴ See <https://www.prnewswire.com/news-releases/comscore-reports-february-2017-us-smartphone-subscriber-market-share-300437639.html>.

from any of the multiple battery suppliers listed above, the United States cell phone market could easily meet any loss in supply created by exclusion of OPPO's products under the remedial orders. So too with DJI, which faces multiple competitors, including Xiaomi, Hover, 3D Robotics, Parrot, Zero Zero Robotics, 3D Robotics, Yuneec, and Hubsan, to name a few.⁵

C. LGC And Or Third Parties Make Like Or Directly Competitive Articles Which Could Replace The Subject Articles If They Were Excluded

LGC and third parties make like and directly competitive articles that would replace ATL's products if they were excluded from the United States. LGC has been a manufacturer of lithium-ion batteries since 1999, and since then has continued to increase its sales volume in the battery market based on its competitive technologies and innovative product development. In addition to its manufacturing facility in Holland, Michigan for automotive lithium-ion battery packs, LGC has numerous other manufacturing facilities worldwide, many of which manufacture other models of lithium-ion batteries that directly compete with ATL's batteries.⁶ And as noted in Section B above, the United States market for lithium-ion batteries is sufficiently competitive that competitors can easily replace any articles excluded by LGC's requested remedial orders. This is particularly true in light of ATL's relatively small share of the U.S. market. LGC and third parties are thus in a position to replace the volume of infringing articles in a commercially reasonable time. The same holds for downstream products. As explained in Section B above, the markets for downstream products containing infringing battery technology are diverse, competitive, fast-moving, and capable of compensating for any temporary shortfall created by the proposed remedial orders.

D. The Requested Remedial Orders Will Not Adversely Impact United States Consumers

⁵ Additional manufacturers of recreational drones may be found at the following listing of all drone manufacturers worldwide: <http://www.uavglobal.com/list-of-manufacturers/>.

⁶ See <http://www.lgchem.com/global/small-battery/it-device-battery/product-detail-PDEA0001>.

The issuance of the requested remedial orders will not have an adverse impact on U.S. consumers. As noted above, LGC and third parties are capable of meeting U.S. market demand in the event of exclusion. Similarly, downstream markets are sufficiently competitive and diverse to ensure continued supply under LGC's proposed relief. It is thus unlikely that consumers would experience any supply-related impact if the orders should issue.

E. Conclusion

Issuance of the requested remedial orders will provide effective relief in the face of Respondents' ongoing and open patent infringement in the United States. Protecting LGC's intellectual property rights and associated domestic industry in the United States through the requested remedial orders will accordingly serve the public interest with little or no adverse effect. For these reasons, there is no need to divert public, party, and Commission resources for an ALJ Recommended Determination on the Public Interest.

Respectfully submitted,

Dated: October 25, 2017



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LG Chem, Ltd., LG Chem Michigan, Inc., LG
Chem Power, Inc. and Toray Industries, Inc.

UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C. 20436

In the Matter of

CERTAIN BATTERIES AND
ELECTROCHEMICAL DEVICES
CONTAINING COMPOSITE
SEPARATORS, COMPONENTS THEREOF,
AND PRODUCTS CONTAINING SAME

Investigation

No. 337-TA-_____

**COMPLAINT OF LG CHEM, LTD., LG CHEM MICHIGAN INC., LG CHEM POWER
INC., AND TORAY INDUSTRIES, INC. UNDER SECTION 337 OF THE TARIFF ACT
OF 1930, AS AMENDED**

COMPLAINANTS:

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Seoul 07336, South Korea
Telephone: +82-2-3773-1114

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1 LG Way
Holland, MI 49423
Telephone: (616) 494-7190

LG Chem Power Inc.
1857 Technology Dr.
Troy, MI 48083
Telephone: (248) 307-1800

Toray Industries, Inc.
Nihonbashi Mitsui Tower
1-1, Nihonbashi-Muromachi 2-chome,
Chuo-ku
Tokyo, Japan

PROPOSED RESPONDENTS:

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3503 Wharf Cable TV Tower
9 Hoi Shing Road
Tsuen Wan N.T., Hong Kong
Telephone: +852-2498-0908

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Burbank, CA 91502
Telephone: (818) 235-0789

Guangdong OPPO Mobile
Telecommunications Corp., Ltd.
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Dongguan, 523850, Guangdong, China
Telephone: +86-769-8607-6999

OPPO Digital, Inc.
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2.	Certified copy of U.S. Patent No. 7,638,241 (“the ’241 patent”)
3.	Certified copy of U.S. Patent No. 7,709,152 (“the ’152 patent”)
4.	Certified assignment of the ’517, ’241 and ’152 patents
5.	Corporate information for Amperex Technology Limited (“ATL”) from Hoover’s
6.	ATL website – Contact Us
7.	ATL website – About Us
8.	DJI Technology Co., Ltd. (“DJI”) website – Contact Us
9.	Corporate information for DJI Technology, Inc. (“DJI USA”) from Hoover’s
10.	Corporate information for Guangdong OPPO Mobile Telecommunications Corp., Ltd. (“OPPO”) from Hoover’s
11.	Corporate information for OPPO Digital, Inc. (“OPPO USA”) from Hoover’s
12.	Exemplary Claim Chart Comparing the Independent Claim of the ’517 patent with a representative ATL electrochemical device (Cell 844297)
13.	Exemplary Claim Chart Comparing the Independent Claim of the ’517 patent with a representative ATL electrochemical device (Cell 425882)
14.	Exemplary Claim Chart Comparing the Independent Claim of the ’517 patent with a representative ATL electrochemical device (Cell 346176)
15.	Exemplary Claim Chart Comparing the Independent Claims of the ’241 patent with a representative ATL electrochemical device (Cell 844297)
16.	Exemplary Claim Chart Comparing the Independent Claims of the ’241 patent with a representative ATL electrochemical device (Cell 425882)
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18.	Exemplary Claim Chart Comparing the Independent Claim of the ’152 patent with a representative ATL electrochemical device (Cell 844297)
19.	DJI Phantom 3 Battery Pack Photographs

20.	DJI Phantom 3 Battery Pack Interior Photographs
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22.	OPPO HA-2SE Headphone Amplifier Photographs
23.	OPPO HA-2SE Headphone Amplifier Interior Photographs
24.	OPPO Mirror 5s Smartphone Photographs
25.	OPPO Mirror 5s Smartphone Interior Photographs
26.	CONFIDENTIAL: Declaration of Jang Woo Park Regarding Domestic Industry
27.	CONFIDENTIAL: Declaration of Young Jae Kim Regarding Domestic Industry
28.	CONFIDENTIAL: Exemplary Claim Chart Demonstrating LGC's Practice of the '517 patent
29.	CONFIDENTIAL: Exemplary Claim Chart Demonstrating LGC's Practice of the '241 patent
30.	CONFIDENTIAL: Exemplary Claim Chart Demonstrating LGC's Practice of the '152 patent
31.	CONFIDENTIAL: Exemplary Claim Chart Demonstrating LGC's Practice of the '517 patent
32.	CONFIDENTIAL: Exemplary Claim Chart Demonstrating LGC's Practice of the '241 patent
33.	CONFIDENTIAL: Exemplary Claim Chart Demonstrating LGC's Practice of the '152 patent
34.	CONFIDENTIAL: Patent Agreements between LGC and Toray
35.	CONFIDENTIAL: LGC Specifications for P2.7 Cell
36.	CONFIDENTIAL: LGC Recipe for P2.7 Cell
37.	CONFIDENTIAL: LGC Specifications for A7 Cell
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39.	CONFIDENTIAL: LGC Operation Standard for A7 Cell
40.	CONFIDENTIAL: Licensees

LIST OF APPENDICES

- A. Certified copy of file wrapper for '517 patent
- B. References Mentioned in the Prosecution History of the '517 patent
- C. Certified copy of file wrapper for '241 patent
- D. References Mentioned in the Prosecution History of the '241 patent
- E. Certified copy of file wrapper for '152 patent
- F. References Mentioned in the Prosecution History of the '152 patent

I. INTRODUCTION

1. Complainants LG Chem, Ltd. (“LGC”), LG Chem Michigan Inc. (“LG CMI”), LG Chem Power Inc. (“LGCPI”), and Toray Industries, Inc. (“Toray”) (collectively “Complainants”) request that the United States International Trade Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 (“Section 337”), to remedy the unlawful importation into the United States, sale for importation into the United States, and/or sale within the United States after importation, of certain batteries and electrochemical devices containing composite separators, components thereof, and products containing the same (collectively referred to as “Accused Products”) that infringe valid and enforceable United States patents owned by LGC and Toray.

2. The proposed respondents are Amperex Technology Limited (“ATL”), DJI Technology Co., Ltd. (“DJI”), DJI Technology, Inc. (“DJI USA”), Guangdong OPPO Mobile Telecommunications Corp., Ltd. (“OPPO”), and OPPO Digital, Inc. (“OPPO USA”) (collectively, “Respondents”). Respondents have engaged in unfair acts in violation of Section 337 through and in connection with the unlicensed importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of accused products that infringe one or more claims of United States Patent No. 7,662,517 (“the ’517 patent”); one or more claims of United States Patent No. 7,638,241 (“the ’241 patent”); and one or more claims of United States Patent No. 7,709,152 (“the ’152 patent”). The ’517, ’241, and ’152 patents are collectively referred to herein as “the Asserted Patents.”

3. Complainants assert that Respondents directly infringe, contributorily infringe, and/or induce the infringement of at least the following claims of the Asserted Patents (collectively, “the Asserted Claims”), with independent claims in bold:

Patent	Asserted Claims
7,662,517	1, 2, 5-15, 18
7,638,241	1-5, 9-12, 14-29, 30, 31, 33-36
7,709,152	1-13, 16-20

4. Certified copies of the Asserted Patents accompany this Complaint as Exhibits 1 to 3. Copies of the prosecution histories of the Asserted Patents and references cited therein accompany this Complaint as Appendices A-F. Assignment records for the Asserted Patents accompany this Complaint as Exhibit 4.

5. As required by Section 337(a)(2) and defined by Section 337(a)(3), an industry in the United States exists relating to articles protected by the Asserted Patents.

6. Complainants seek a permanent limited exclusion order, pursuant to Section 337(d), excluding from entry into the United States all of Respondents' Accused Products that infringe one or more claims of the Asserted Patents. Complainants also seek permanent cease and desist orders, pursuant to Section 337(f), directing each Respondent to cease and desist from activities including, but not limited to, importing, marketing, advertising, demonstrating, warehousing inventory for distribution, offering for sale, selling, distributing, servicing, repairing, programming, updating, or using such Accused Products in the United States. Complainants also seek the imposition of a bond if Respondents continue to import infringing articles during the 60-day Presidential review period, pursuant to 19 U.S.C. § 1337(j).

II. COMPLAINANTS

7. LGC is a corporation organized under the laws of South Korea, having a principal place of business at 128 Yeoui-daero, Yeongdeungpo-gu, Seoul 07336, South Korea. LGC is a global leader in broad-ranging chemical, material, and energy technologies, including the

development, manufacture, and support of state-of-the-art lithium-ion batteries that are widely used in various electronic and automotive applications around the world.

8. LGCMI is a wholly-owned subsidiary of LGC, existing under the laws of the State of Delaware with its principal place of business at 1 LG Way, MI 49423. LGCMI develops and manufactures lithium-ion batteries at its facilities in Michigan, including individual battery cells as well as fully-assembled battery packs for consumer applications.

9. LGCPI is a wholly-owned subsidiary of LGC, existing under the laws of the State of Delaware with its principal place of business at 1857 Technology Dr., Troy, MI 48083. LGCPI performs, at its Michigan facility, research, development, engineering, design, and packaging of lithium-ion batteries for various automotive and industrial applications.

10. For roughly 70 years since its founding in 1947, LGC has established itself as one of the most respected chemical companies in the world, relentlessly pursuing the enhancement of the quality of life through continuous technological development and breakthrough innovations. More recently, LGC is known as one of the world's largest and most innovative producers of lithium-ion batteries. Its lithium-ion batteries are widely recognized as being among the most compact, lightweight, efficient, and safe. Not surprisingly, LGC retains numerous intellectual property rights covering chemical, mechanical, and electrical technologies, and much more, relating to lithium-ion battery technology.

11. Among LGC's numerous lithium-ion battery innovations is its patented Safety Reinforced Separator ("SRS") technology. SRS offers superior safety through the improvement of the mechanical strength and heat resistance of batteries by applying a ceramic coating to the battery's separator layer, thereby enhancing robustness and reducing the potential for short

circuits inside the battery. As a result of SRS and other innovations, LGC's lithium-ion batteries have enjoyed success in the marketplace.

12. Toray is a corporation organized under the laws of Japan with its principal place of business at Nihonbashi Mitsui Tower 1-1, Nihonbashi-Muromachi 2-chome, Chuo-ku Tokyo, Japan. Toray is a global leader in the integrated chemical industry.

13. Complainants have substantial operations in the United States, including with respect to the Asserted Patents. For example, Complainant LGCMI has research and development, testing and engineering, manufacturing, sales and marketing, and business offices in Holland, MI, where it has invested hundreds of millions of dollars and employs hundreds of workers. Complainant LGCPI has research and development, testing and engineering, manufacturing, sales and marketing, and business offices in Troy, MI, where it has invested tens of millions of dollars and employs hundreds of workers. Through their facilities in Michigan, Complainants supply millions of battery cells each year to automotive manufacturers including General Motors and Chrysler. Given the increasing demand for safe, high-performance lithium-ion batteries in the U.S. marketplace, especially in the automotive industry, Complainants are in the process of further expanding their manufacturing facilities in Michigan, adding hundreds of jobs and hundreds of millions of dollars to the local economy.

14. The Asserted Patents were originally assigned to LGC. In April 2017, LGC executed a deed of assignment through which it conveyed certain rights to—and received certain rights from—Toray. *See Exhibit 4.*

15. Complainants have made and continue to make significant investment in the design, development, and production of products protected by the Asserted Patents. In the United States, Complainants exploit the technology covered by the Asserted Patents through

various activities, including research and development, engineering, manufacturing, and sales, as discussed more fully below. Along with this exploitation of these technologies, Complainants have made significant investments in the United States in facilities, equipment, labor, capital, and research and development as detailed, *infra*. As set forth in more detail herein, Complainants have invested hundreds of millions of dollars in their domestic operations devoted to articles protected by the asserted patents. In addition, Complainants together employ hundreds of workers in Michigan.

III. PROPOSED RESPONDENTS

16. Amperex Technology Limited (“ATL”) is a Chinese corporation having a principal place of business at 3503 Wharf Cable TV Tower, 9 Hoi Shing Road, Tsuen Wan N.T., Hong Kong. *See* Exhibits 5 and 6. ATL also operates several subsidiaries, including Dongguan Amperex Technology Limited based in Dongguan, China and Ningde Amperex Technology Limited based in Ningde, China. *See* Exhibits 5 and 6. According to its website (www.atlbattery.com), ATL is a global company known worldwide for its lithium-ion battery cells and packs. *See* Exhibit 7. In particular, ATL supplies its infringing battery products to “world-renowned branded smartphones, tablets and notebooks OEMs, drones, robots and power tools specialists, VR/AR vanguards and various wearable and smart home technology trailblazers.” *Id.* ATL, or others on its behalf, manufactures the Accused Products in China or another foreign country, and then imports them into the United States, sells them for importation into the United States, sells them after importation into the United States, and/or engages in repair, service, and support related activities regarding the Accused Products.

17. DJI Technology Co., Ltd. (“DJI”) is a Chinese corporation having a principal place of business at 14th Floor, West Wing, Skyworth Semiconductor Design Building, No.18

Gaoxin South 4th Ave, Nanshan District, 518057 Shenzhen, China. *See* Exhibit 8. On information and belief, DJI designs, manufactures, develops, imports, sells for importation into the United States, offers for sale, sells, and/or uses in the United States after importation products, such as drones and aerial photography systems, containing the Accused Products, as well as lithium-ion battery packs for such products. As shown in Exhibit 20, accused battery cells manufactured by ATL are contained in DJI products sold in the United States.

18. DJI Technology, Inc. (“DJI USA”) is a California corporation having a principal place of business at 201 S Victory Blvd., Burbank, CA 91502. *See* Exhibit 9. On information and belief, DJI USA designs, manufactures, develops, imports, sells for importation into the United States, offers for sale, sells, and/or uses in the United States after importation products, such as drones and aerial photography systems, containing the Accused Products, as well as lithium-ion battery packs for such products. On information and belief, DJI USA is the official supplier of DJI products in the United States. As shown in Exhibit 20, accused battery cells manufactured by ATL are contained in DJI products sold in the United States.

19. Guangdong OPPO Mobile Telecommunications Corp., Ltd. (“OPPO”) is a Chinese corporation having a principal place of business at 18 Haibin Road, Wusha, Chang'An Town, Dongguan, 523850, Guangdong, China. *See* Exhibit 10. On information and belief, OPPO designs, manufactures, develops, imports, sells for importation into the United States, offers for sale, sells, and/or uses in the United States after importation products containing the Accused Products. As shown in Exhibit 25, accused battery cells manufactured by ATL are contained in OPPO products sold in the United States.

20. OPPO Digital, Inc. (“OPPO USA”) is a California corporation having a principal place of business at 162 Constitution Dr., Menlo Park, CA 94025. *See* Exhibit 11. On

information and belief, OPPO USA designs, manufactures, develops, imports, sells for importation into the United States, offers for sale, sells, and/or uses in the United States after importation products containing the Accused Products. As shown in Exhibit 23, accused battery cells manufactured by ATL are contained in OPPO USA products sold in the United States.

21. On information and belief, Respondents collectively design, develop, manufacture, sell for importation, export, import into the United States, sell after importation into the United States, lithium-ion batteries and products containing lithium-ion batteries, as further described below.

IV. THE TECHNOLOGY AND PRODUCTS AT ISSUE

22. The technology at issue relates generally to lithium-ion batteries that include separators. As will be described in detail below, the Asserted Patents are directed to features that improve the mechanical strength and heat resistance of separators that are used in lithium-ion batteries, thereby enhancing overall battery safety through enhanced robustness and reduced likelihood of short circuits inside the battery.

23. Batteries are electrochemical devices that store energy electrochemically. At minimum, a battery includes a positive electrode (i.e., cathode), a negative electrode (i.e., anode), a separator, and an electrolyte. The separator provides a physical separation between the two electrodes, and the electrolyte enables the movement of ions between the electrodes. The basic electrochemical unit that contains the electrodes, separator, and electrolyte in a case such as an aluminum pouch is referred to as a “cell,” and a collection of cells that are assembled for use is referred to as a “pack” as a final battery product or in some cases a “module”, e.g., for use in an electric vehicle. In consumer electronics application such as smart phones, a battery pack as a final battery product may have a single cell along with a protection circuit PCB.

24. Lithium-ion batteries are charged and discharged through the movement of ions between the electrodes. During charging, lithium ions travel from the cathode, through the electrolyte, to the anode. During discharging, lithium ions travel back from the anode to the cathode. During this process, the separator provides a barrier between the cathode and the anode so as to prevent electrical short circuits, which can occur when the two electrodes make contact, while still allowing the ions to pass through. Polymer-based separators used in lithium-ion batteries can also provide a shutdown function by which the pores of the separator can close up through a melting process at high temperature to stop the transport of ions. That is, the separator can effectively shut down the cell to prevent a dangerous failure conditions, such as fire or explosion. LGC's SRS technology further improves the safety of lithium-ion batteries as well as the quality of lithium-ion batteries by, among other things, providing a composite separator that includes a ceramic coating layer on a polymer base.

25. Pursuant to 19 C.F.R. § 210.12(a)(12), the Accused Products are: (a) certain of ATL's batteries and electrochemical devices containing composite separators and components thereof, and (b) products containing the same, and components thereof. These batteries, electrochemical devices, and products, without permission, implement LGC's technologies as described and claimed in the Asserted Patents. Such batteries, electrochemical devices, and components thereof include, but are not limited to, ATL cells used in DJI's Phantom 3 drone (e.g., ATL Cell 844297), OPPO's HA-2SE headphone amplifier (e.g., ATL Cell 425882), and OPPO's Mirror 5s smartphone (e.g., ATL Cell 346176). The identification of exemplary models and products is intended for illustration and is not intended to limit the scope of the investigation. Further discovery may reveal additional infringing products. Any remedy should extend to all

present and future infringing products of Respondents regardless of model number or type of product.

V. THE ASSERTED PATENTS

A. The '517 Patent

1. Identification of the Patent and Ownership by LGC

26. U.S. Patent No. 7,662,517 (“the '517 patent”) is entitled “Organic/Inorganic Composite Microporous Membrane and Electrochemical Device Prepared Thereby” and duly and legally issued on February 16, 2010. The '517 patent issued from U.S. Patent Application Serial No. 11/721,259 and claims priority to Korean patent applications KR 10-2004-0110400 and KR 10-2004-0110402, both filed on December 22, 2004. The '517 patent is directed to the separator, which is an element within the lithium-ion battery that is disposed between the cathode and the anode so as to prevent electrical short circuits.

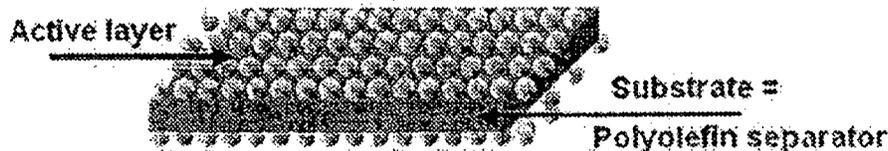
27. At the time of issuance, LGC was the owner, by valid assignment, of the entire right, title, and interest in and to the '517 patent. Prior to issuance, the '517 inventors assigned all right, title, and interest in U.S. Patent Application Serial No. 11/721,259 to LGC. This assignment is recorded at the United States Patent and Trademark Office (“USPTO”) at Reel/Frame 019423/0112. In April 2017, LGC executed a deed of assignment through which it conveyed certain rights to—and received certain rights from—Toray. *See* Exhibit 4. The '517 patent is valid, enforceable, and is currently in full force and effect.

28. Pursuant to Rule 210.12(c) of the Commission’s Rules of Practice and Procedure, this Complaint is accompanied by Appendices A and B containing: (i) a certified copy and three additional copies of the prosecution history of the '517 patent; and (ii) four copies of each reference mentioned in that prosecution history, respectively.

2. Non-Technical Description of the Patented Invention

29. The '517 patent relates to a composite, porous separator structure for lithium-ion batteries, electrochemical devices (i.e., batteries) containing the same, and a method to manufacture such separators.¹ With reference to the exemplary embodiment of Fig. 1 (reproduced below), the composite separator includes (i) a polyolefin-based separator substrate and (ii) an active layer that is formed by coating the polyolefin-based separator substrate. The active layer is made up of an interconnected network of inorganic particles that are held together by a binder polymer and that form interstitial volumes among the particles among the particles to form a pore structure. The polyolefin layer can provide shutdown protection through a melting process, and the active layer made up of inorganic particles provides improved thermal and electrochemical safety. Because both the polyolefin-based separator substrate and the active layer include uniform pore structures, lithium ions can pass through more uniformly for improved electrochemical performance.

FIG. 1



'517 Patent at Fig. 1

3. Foreign Counterparts to the '517 Patent

¹ All non-technical descriptions of the patents herein are presented to give a general background of those inventions. Such statements are not intended to be used, nor should be used, for purposes of patent claim interpretation. Complainants present these statements subject to, and without waiver of, their right to argue that claim terms should be construed in a particular way, as contemplated by claim interpretation jurisprudence and the relevant evidence.

30. The following foreign patent(s) and/or patent application(s) correspond to the '517 patent: WO2006068428, TWI311102, RU2364011, KR100775310, KR 10-2004-0110400, KR 10-2004-0110402, JP2014232730, JP2014082216, JP2013062257, JP5883762, JP2012169284, JP2012124183, JP2012140015, JP2012153897, JP2012167280, JP2012134177, JP2012146677, JP2012132023, JP5460962, EP2763211, EP2763210, EP2528142, EP2528141 (issued in AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), EP2528140, EP2528139, EP1829139 (issued in AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), DE202005022139, DE202005022138, DE202005021948, CN102646802, CN101088183, CA2591941, IN2122/KOLNP/2007 and BRPI0518118. No other foreign patents or patent applications corresponding to the '517 patent have been filed, abandoned, withdrawn, or rejected.

B. The '241 Patent

1. Identification of the Patent and Ownership by LGC

31. U.S. Patent No. 7,638,241 ("the '241 patent") is entitled "Organic/Inorganic Composite Separator Having Morphology Gradient, Manufacturing Method Thereof and Electrochemical Device Containing the Same" and duly and legally issued on December 29, 2009. The '241 patent issued from U.S. Patent Application Serial No. 11/997,948 and claims priority to Korean patent application KR 10-2005-0118315 filed on December 6, 2005. The '241 patent is directed to the separator, which is an element within the lithium-ion battery that is disposed between the cathode and the anode so as to prevent electrical short circuits.

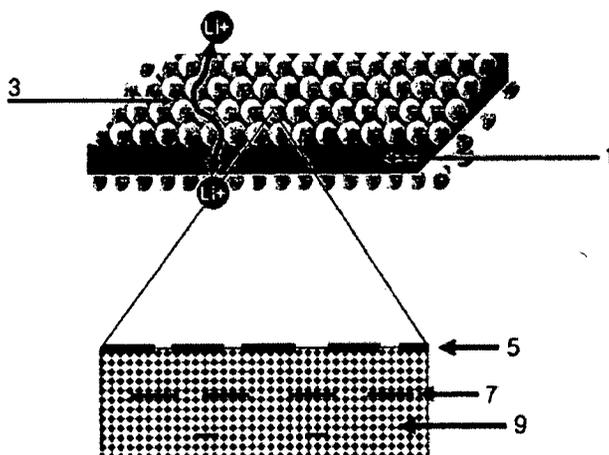
32. At the time of issuance, LGC was the owner, by valid assignment, of the entire right, title, and interest in and to the '241 patent. Prior to issuance, the '241 inventors assigned all right, title, and interest in U.S. Patent Application Serial No. 11/997,948 to LGC. This

assignment is recorded at the United States Patent and Trademark Office (“USPTO”) at Reel/Frame 020465/0308. In April 2017, LGC executed a deed of assignment through which it conveyed certain rights to—and received certain rights from—Toray. *See* Exhibit 4. The ’241 patent is valid, enforceable, and is currently in full force and effect.

33. Pursuant to Rule 210.12(c) of the Commission’s Rules of Practice and Procedure, this Complaint is accompanied by Appendices C and D containing: (i) a certified copy and three additional copies of the prosecution history of the ’241 patent; and (ii) four copies of each reference mentioned in that prosecution history, respectively.

2. Non-Technical Description of the Patented Invention

34. The ’241 patent relates to a composite, porous separator structure for lithium-ion batteries, electrochemical devices (i.e., batteries) containing the same, and a method to manufacture such separators. With reference to Fig. 1 (reproduced below), the composite separator includes (i) a porous substrate and (ii) an active layer that coats the porous substrate. The active layer includes a mixture of inorganic particles and binder polymer. In order to prevent the inorganic particles in the porous active layer from becoming detached and the adhesion characteristics of the separator toward the electrodes from being deteriorated, the ’241 patent teaches increasing the binder polymer content in the surface region of the porous active layer. That is, the binder polymer/inorganic particles ratio is higher at the surface region of the porous active layer than it is inside the layer, thereby providing improved adhesion properties in the upper regions of the active layer. The lower concentration of binder in the lower regions of the active layer help maintain better ionic movement.



'241 Patent at Fig. 1

3. Foreign Counterparts to the '241 Patent

35. The following foreign patent(s) and/or patent application(s) correspond to the '241 patent: WO2007066967, TWI422090, RU2403653, KR100727247, KR 10-2005-0118315, JP5671208, EP1972017 (issued in DE, FI, FR, GB, IT, SE), CN101326658, CA2632364, IN5844/DELNP/2008 and BRPI0620590.

36. No other foreign patents or patent applications corresponding to the '241 patent have been filed, abandoned, withdrawn or rejected.

C. The '152 Patent

1. Identification of the Patent and Ownership by LGC

37. U.S. Patent No. 7,709,152 ("the '152 patent") is entitled "Organic/Inorganic Composite Separator Having Porous Active Coating Layer and Electrochemical Device Containing the Same" and duly and legally issued on May 4, 2010. The '152 patent issued from U.S. Patent Application Serial No. 12/158,934 and claims priority to Korean patent application KR 10-2007-0011818 filed on February 5, 2007. The '152 patent is directed to the separator,

which is an element within the lithium-ion battery that is disposed between the cathode and the anode so as to prevent electrical short circuits.

38. At the time of issuance, LGC was the owner, by valid assignment, of the entire right, title, and interest in and to the '152 patent. Prior to issuance, the '152 inventors assigned all right, title, and interest in U.S. Patent Application Serial No. 12/158,934. This assignment is recorded at the United States Patent and Trademark Office ("USPTO") at Reel/Frame 021257/0011. In April 2017, LGC executed a deed of assignment through which it conveyed certain rights to—and received certain rights from—Toray. *See* Exhibit 4. The '152 patent is valid, enforceable, and is currently in full force and effect.

39. Pursuant to Rule 210.12(c) of the Commission's Rules of Practice and Procedure, this Complaint is accompanied by Appendices E and F containing: (i) a certified copy and three additional copies of the prosecution history of the '152 patent; and (ii) four copies of each reference mentioned in that prosecution history, respectively.

2. Non-Technical Description of the Patented Invention

40. The '152 patent relates to a composite, porous separator structure for lithium-ion batteries, and electrochemical devices (i.e., batteries) containing the same. In particular, the composite separator includes (i) a polyolefin substrate having pores and (ii) an active layer that coated on the polyolefin substrate. The active layer includes a mixture of inorganic particles and binder polymer. For improved safety and performance, the '152 patent specifies a minimum peeling force between the active layer and the polyolefin substrate as well as a maximum allowable thermal shrinkage of the separator. To this end, in one embodiment, a particular weight ratio of the inorganic particles and the binder polymer is specified. With reference to Fig. 2 (reproduced below), the '152 patent describes various specific testing conditions, such as the

test setup for measuring peeling force shown in Fig. 2, that yielded the required values of peeling force and thermal shrinkage.



'152 Patent at Fig. 2

3. Foreign Counterparts to the '152 Patent

41. The following foreign patent(s) and/or patent application(s) correspond to the '152 patent: WO2008097013, TWI517483, TWI464937, TWI364864, RU2455734, KR100727248, JP6069677, JP5705682, JP4846849, EP2693527, EP2693526, EP2122714, DE202008018204, CN105118949, CN101542777, IN05149/CHENP/2009 and BRPI0806419.

42. No other foreign patents or patent applications corresponding to the '152 patent have been filed, abandoned, withdrawn or rejected.

VI. UNFAIR ACTS OF PROPOSED RESPONDENTS

43. Upon information and belief, Respondents' Accused Products directly infringe, contributorily infringe, and/or induce the infringement of at least the Asserted Claims—*i.e.*, claims 1, 2, 5-15, and 18 of the '517 patent; claims 1-5, 9-12, 14-31, and 33-36 of the '241 patent; and claims 1-13 and 16-20 of the '152 patent. Discovery may reveal that Respondents infringe additional claims of the Asserted Patents.

44. On information and belief, Respondents manufacture, assemble, package and test, and/or purchase the accused batteries, electrochemical devices, and components thereof outside the United States, specifically, at least in China. Respondents then import into the United States, sell for importation, and/or sell within the United States after importation, the Accused Products.

45. By way of example, Respondents DJI and DJI USA have violated Section 337 by importing, selling for importation, and/or selling in the United States after importation products containing the infringing ATL cells and/or packs, such as DJI Phantom 3 drone. Claim charts demonstrating how these representative Accused Products infringe claim 1 of the '517 patent, claim 1 of the '241 patent, and claim 1 of the '152 patent are attached to the Complaint as Exhibits 12, 15 and 18, respectively. Further discovery may reveal additional infringing batteries and electrochemical devices containing composite separators and components thereof, and products containing the same.

46. By way of example, Respondents OPPO and OPPO USA have violated Section 337 by importing, selling for importation, and/or selling in the United States after importation products containing the infringing ATL cells and/or packs, such as OPPO HA2SE headphone amplifier and Mirror 5s smartphone. Claim charts demonstrating how these representative Accused Products infringe claim 1 of the '517 patent and claim 1 of the '241 patent are attached to the Complaint as Exhibits 13, 14, 16 and 17, respectively. Further discovery may reveal additional infringing batteries and electrochemical devices containing composite separators and components thereof, and products containing the same.

47. By way of example, on information and belief, Respondent ATL has violated Section 337 by importing, selling for importation, and/or selling in the United States after importation, products containing the infringing ATL cells and/or packs, such as ATL Cell for

Battery Model A1445, ATL Cell 494397, ATL Cell 356070 for Battery Model BL242, ATL Cell 4242112, ATL Cell 436577, ATL Cell 506274, ATL Cell 346176 for Battery Model BLP577, ATL Cell 425882 for Battery Model BLP591, ATL Cell 844297 for Battery Model PH3-4480mAh-15.2V, ATL Cell 476569, and ATL Cell 426168. Claim charts demonstrating how representative Accused Products infringe claim 1 of the '517 patent, claim 1 of the '241 patent, and claim 1 of the '152 patent are attached to the Complaint as Exhibits 12-18, respectively. Further discovery may reveal additional infringing batteries and electrochemical devices containing composite separators and components thereof, and products containing the same.

48. On information and belief, Respondent ATL also induces, and continues to induce, infringement of the Asserted Patents with specific intent that these acts infringe the Asserted Patents. On information and belief, Respondent ATL actively induces others to infringe the Asserted Patents by selling the Accused Products in the United States and by providing materials and instructions for operation of Accused Products, with the specific intent and knowledge that the materials and instructions direct, teach, or assist others to infringe the Asserted Patents.

49. For example, Respondent ATL has induced infringement of the Asserted Patents by selling and providing lithium-ion cells to Respondents DJI, DJI USA, OPPO, and OPPO USA, without license or authority, for the manufacture of and for the purpose of incorporation into products containing lithium-ion cells for importation and sale in the United States. As shown in Exhibits 12-18, ATL is inducing the infringement of at least claim 1 of the '517 patent, claim 1 of the '241 patent, and claim 1 of the '152 patent by others, including manufacturers, distributors, and customers. Respondent ATL induced such infringing acts and knew or should have known that their actions would induce actual infringement of the Asserted Patents. Upon

information and belief, Respondent ATL had actual notice of the Asserted Patents no later than May 11, 2017, when LGC provided Respondent ATL with copies of the Asserted Patents and claim charts for each of the Asserted Patents explaining how Respondent ATL directly infringed, contributorily infringed, and/or induced its customers and users to infringe the Asserted Patents. Respondent ATL also has actual knowledge and notice based on the service of this Complaint by the Commission as well as the filing of a parallel complaint against ATL in the United States District Court for the Eastern District of Michigan on October 25, 2017.

50. On information and belief, Respondent ATL also contributorily infringes certain Asserted Claims through its sale and offers to sell within the United States and/or import into the United States components of the Accused Products, constituting a material part of the Asserted Claims, knowing the same to be especially made or especially adapted for use in an infringement of the Asserted Patents, and not a staple article or commodity of commerce suitable for substantial non-infringing use. For example, on information and belief, the Accused Products and/or components thereof are specifically designed for use in infringement of the Asserted Claims. Due to their specific designs, the Accused Products and/or components thereof do not have any substantial non-infringing uses.

51. Respondents sell the Accused Products with the knowledge that the devices infringe. Upon information and belief, Respondent ATL had actual notice of the Asserted Patents no later than May 11, 2017, when LGC provided Respondent ATL with copies of the Asserted Patents and claim charts for each of the Asserted Patents explaining how Respondent ATL directly infringed, contributorily infringed, and/or induced its customers and users to infringe the Asserted Patents. Respondent ATL also has actual knowledge and notice based on the service of this Complaint by the Commission as well as the filing of a parallel complaint

against ATL in the United States District Court for the Eastern District of Michigan on October 25, 2017.

VII. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

52. On information and belief, Respondents, or others on their behalf, manufacture the Accused Products in China or another foreign country and then import them into the United States, sell them for importation into the United States and/or sell them after importation into the United States.

53. Upon information and belief, Respondents DJI and DJI USA import and distribute drones and components for same, including lithium-ion batteries, to customers in the United States. For example, a DJI Phantom 3 battery pack recently purchased in the United States includes labels that state “Made in China.” *See* Exhibit 19. Exhibit 20 shows that ATL Cell 844297 is contained inside the DJI Phantom 3 battery pack purchased in the United States. In addition, importation records obtained from panjiva.com indicate that Respondent DJI USA imports into the United States drones and components for drones from various locations in China including “Shenzhen, Guangdong, China.” *See* Exhibit 21.

54. Upon information and belief, Respondents OPPO and OPPO USA import and distribute electronic devices, such as headphone amplifiers and smartphones, that contain lithium-ion batteries, to customers in the United States. For example, an OPPO HA-2SE headphone amplifier recently purchased in the United States includes labels that state “Assembled in China.” *See* Exhibit 22. Exhibit 23 shows that ATL Cell 425882 is contained inside the OPPO HA-2SE headphone amplifier purchased in the United States. Additionally, an OPPO Mirror 5s smartphone recently purchased in the United States includes labels that state “MADE IN CHINA.” (in Chinese characters “產地: 中國”). *See* Exhibit 24. Exhibit 24 further indicates

that the OPPO Mirror 5s smartphone purchased in the United States was shipped from a warehouse located in the state of New York. Exhibit 25 shows that ATL Cell 346176 is contained inside the OPPO Mirror 5s smartphone purchased in the United States.

55. Upon information and belief, ATL is a global supplier of lithium-ion batteries and supplies many key players in the electronics market with lithium-ion battery cells and/or packs. Upon information and belief, ATL products, including ATL Cell for Battery Model A1445, ATL Cell 494397, ATL Cell 356070 for Battery Model BL242, ATL Cell 4242112, ATL Cell 436577, ATL Cell 506274, ATL Cell 346176 for Battery Model BLP577, ATL Cell 425882 for Battery Model BLP591, ATL Cell 844297 for Battery Model PH3-4480mAh-15.2V, ATL Cell 476569, and ATL Cell 426168, have been and are being sold for importation into the United States for use in sale of the Accused Products. Discovery is expected to reveal additional specific acts of Respondents' importation, sale for importation, and/or sale after importation of the Accused Products.

VIII. CLASSIFICATION UNDER THE HARMONIZED TARIFF SCHEDULE

56. The Accused Products are believed to fall within at least the following classifications of the Harmonized Tariff Schedule of the United States: 8507.60.00, 8507.80.81, 8507.90.80, 8517.12.00, 8518.40.20, 8518.50.00, and 9503.00.00. These classifications are intended for illustration only and are not intended to be restrictive of the Accused Products.

IX. LICENSEES

57. Pursuant to Commission Rule 210.12(a)(9)(iii), licensees to the '517, '241, and '152 patents are shown in Confidential Exhibit 40.

X. DOMESTIC INDUSTRY

58. As required by Section 337(a)(2) and defined by Section 337(a)(3), a domestic industry exists in the United States in connection with articles protected by the '517, '241, and '152 patents.

59. LGC is one of the world's largest lithium-ion battery manufacturers, with significant U.S. market share in both automotive and stationary applications. Two of its wholly-owned subsidiaries in the United States play instrumental roles in both the development and production of articles protected by the Asserted Patents. LGCMI manufactures battery cells incorporating the SRS at a plant in Holland, Michigan. These SRS battery cells are, in turn, either utilized by LGCMI itself as it manufactures battery packs incorporating the cells, or are sold to LGCMI's customers who manufacture their own battery packs. LGCPI, has a facility in Troy, Michigan, where it engages in research, development, customer support, and warranty work with respect to the battery management system that is combined with the cells to make a safe and commercially viable automotive battery pack. Through these subsidiaries, LGC has invested, and continues to invest substantial resources in the United States geared to producing products that incorporate the patented technology and providing these products to U.S. industries.

60. As noted in Section V, the patented technology is directed to LGC's Safety Reinforced Separator ("SRS") used in its lithium-ion battery cells. Battery cells made with the SRS enjoy improved stability and performance, including minimizing the likelihood of internal short-circuits that can lead to a "thermal run-away" situation.

61. Thus, LGC's patented SRS is an integral part of the battery cells in which they are included, giving those cells a physical strength and product reliability that customers have come

to demand in their lithium-ion batteries. It is only by being included in the battery cell that the SRS can perform the role for which it is intended—providing strength and stability, as well as the ability for improved performance, to the battery cell.

62. A battery cell incorporating the SRS is not how the SRS is ultimately utilized in a commercial sense. The SRS battery cells made by LGC are either combined in a “battery pack” and sold to and used by LGC’s customers or sold to a customer who in turn combines the cells into a “battery pack.” As part of the manufacturing and assembly process, the large stack of battery cells in a battery pack is typically grouped into smaller stacks called modules. Several of these modules will be placed in a single battery pack, and within each module the cells are welded together to complete the electrical path for current flow.

63. In modern electric vehicles (including hybrid electric vehicles and plug-in hybrid electric vehicles), the battery pack provides the necessary electrical power. The energy released by the battery pack must be carefully controlled, and an uncontrolled energy release can be caused by shorted cells, abnormally high discharge rate, overcharging, or constant recharging, which can weaken the battery. The battery pack’s battery management system works as an electronic safety and monitoring system designed to prevent these conditions from occurring. It manages the performance and safety of the battery pack and the high levels of electrical energy stored within, and is a necessary element of any battery pack intended for automotive applications.

A. Technical Prong

64. Claim charts demonstrating how Complainants’ lithium-ion batteries are covered by an exemplary claim of each of the Asserted Patents are attached as Confidential Exhibits 28C-33C. Therefore, these lithium-ion battery cells and/or packs containing them are protected by the ’517, ’241, and ’152 patents, and a domestic industry for those articles exists.

B. Economic Prong

65. A domestic industry, under subparts (A), (B), and/or (C) of Section 337(a)(3), exists by virtue of LGCMI's and LGCPI's significant U.S. investment in plant and equipment, significant employment of U.S. labor and capital, and substantial investment in U.S. exploitation of the Asserted Patents, including through production, engineering, research and development, warranty, customer support, and other activities designed to exploit the patented technology. LGCMI's and LGCPI's U.S. investments related to the articles protected by the Asserted Patents are discussed in more detail in the Confidential Declarations of Jang Woo Park, Treasurer of LGCMI and Young Jae Kim, Finance Manager of LGCPI. *See Confidential Exhibits 26C-27C.*

66. LGCMI and LGCPI have made and continue to make significant investment in plant and equipment, a significant employment of labor and capital, and substantial investment in exploitation, in the United States with respect to articles protected by the Asserted Patents. LGCMI and LGCPI have made and continue to make substantial investment in facilities in Holland, Michigan and Troy, Michigan, respectively, where hundreds of individuals are employed. These facilities are located in the heart of the United States automotive industry and enable LGCMI and LGCPI to work closely with U.S. automobile manufacturers who increasingly are using battery cells with Safety Reinforced Separator technology in automotive applications. *See Confidential Exhibits 26C-27C.*

XI. RELATED LITIGATION

67. On October 25, 2017, Complainants filed a complaint in the United States District Court for the Eastern District of Michigan, asserting, *inter alia*, infringement of the '517, '241, and '152 patents by ATL.

XII. REQUESTED RELIEF

68. WHEREFORE, by reason of the foregoing, Complainants request that the United States International Trade Commission:

(a) Institute an immediate investigation, pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, with respect to violations of Section 337 based on Respondents' unlawful importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of certain batteries and electrochemical devices containing composite separators and components thereof, and products containing the same, that infringe one or more claims of United States Patent Nos. 7,662,517, 7,638,241, and 7,709,152;

(b) Schedule and conduct a hearing on the unlawful acts and, following the hearing, determine that there has been a violation of Section 337;

(c) Issue a permanent limited exclusion order, pursuant to Section 337(d) of the Tariff Act of 1930, as amended, excluding from entry into the United States all of Respondents' batteries and electrochemical devices containing composite separators and components thereof, and products containing the same, that infringe one or more claims of United States Patent Nos. 7,662,517, 7,638,241, and 7,709,152;

(d) Issue permanent cease and desist orders, pursuant to Section 337(f) of the Tariff Act of 1930, as amended, directing each Respondent to cease and desist from the importation,

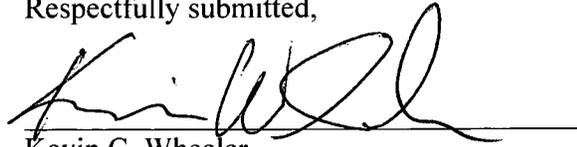
marketing, advertising, demonstrating, warehousing inventory for distribution, servicing, repairing, programming, updating, sale and use of batteries and electrochemical devices containing composite separators and components thereof, and products containing the same, that infringe one or more claims of United States Patent Nos. 7,662,517, 7,638,241, and 7,709,152;

(e) Impose a bond upon each Respondent to the extent it continues to import infringing articles during the 60-day-Presidential review period per 19 U.S.C. § 1337(j); and

(f) Grant such other and further relief as the Commission deems just and proper based on the facts determined by the investigation and the authority of the Commission.

Dated: October 25, 2017

Respectfully submitted,



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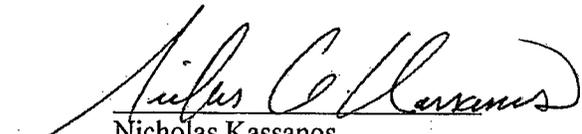
*LG Chem, Ltd., LG Chem Michigan, Inc., LG
Chem Power, Inc. and Toray Industries, Inc.*

VERIFICATION OF COMPLAINT

I, Nicholas Kassanos, declare, in accordance with 19 C.F.R. §§ 210.4 and 210.12(a), under penalty of perjury, that the following statements are true:

1. I am President of Complainant LG Chem Michigan Inc., and I am duly authorized to sign this Complaint on behalf of Complainants;
2. I have read the foregoing Complaint;
3. To the best of my knowledge, information, and belief, based upon reasonable inquiry, the foregoing Complaint is well-founded in fact and is warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law;
4. The allegations or other factual contentions have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery; and
5. The foregoing Complaint is not being filed for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of litigation.

Executed this ¹⁴/8 day of October, 2017.


Nicholas Kassanos
President, LG Chem Michigan Inc.