



# Lithium Ion Battery Fire Extinguishers



**fire protection**  
TECHNOLOGIES



GASEOUS  
SUPPRESSION



WATER  
SUPPRESSION



FOAM  
SUPPRESSION



EXPLOSION  
PROTECTION



FIRE  
DETECTION



MILITARY  
& DEFENCE



SPECIAL  
APPLICATIONS



SUPPORT  
SERVICES

# LITHIUM ION BATTERY FIRE EXTINGUISHER

“EVERY SOLUTION FOR YOUR SPECIAL HAZARD PROBLEMS”

*With the rise in technology that uses lithium batteries, comes the added risk of lithium battery fires. How prepared are you for a lithium battery fire?*

## AVD FIRE

AVD fire offers a range of lithium battery fire portable extinguishers, trolley extinguishers and specialized fire blankets.

AVD is an aqueous dispersion of chemically exfoliated vermiculite. It is applied to lithium battery fires as a mist, extinguishing them and preventing the propagation of the fire.

The fire extinguishers have been locally approved according to AS 1840 & 1851 for a Class A with additive type extinguisher only. At this point in time standards Australia has not published an approval protocol for lithium-ion risk.

AVD however has been independently tested and verified to be effective on extinguishing lithium-ion battery fires according to the following international test protocols:

- Kiwa Test Protocol NTA 8133
- ZSW Germany
- UL Certification (File EX29073 & EX28967)

Lithium battery failure can be caused by the following:

- Physical impact or penetration
- Overheating
- Short circuits
- Internal cell failure
- Manufacturing defects

## HOW IT WORKS



When Lithium-ion batteries are exposed to heat, physical/impact damage or over charging they go into thermal runaway.

The cells are sufficiently swollen releasing hot flammable gases (hydrocarbons) which can ignite.

The Hydrocarbons burn vigorously at high temperature and rapidly heat surrounding cells and materials resulting in a significant fire.

AVD is applied as a fine mist, which instantly cools the batteries and extinguishes the flames.

The AVD encapsulates the fuel source and insulates the cells preventing further thermal runaway; bringing the fire under control.

## INDUSTRIES AND APPLICATIONS

Lithium batteries are a common part of everyday life, at home and at work. They're used in children's toys, electronics, computers, personal devices, factory equipment and much more – which means that the dangers they pose are prominent. Lithium battery fire hazards can be caused by physical impact, overheating, internal cell failure, short circuits or manufacturing defects.

AVDfire provides a range of lithium battery fire solutions for a variety of vertical sectors to suit their individual requirements. With the use of lithium batteries on the rise, having the right protection in place is vital. Some of the industries and applications AVDFire works with include:

- Transport – e.g. Aviation, Automotive
- Energy Storage
- Shipping
- Logistics
- Marine
- Automotive
- Domestic
- Industrial
- Waste and Recycling Facilities



**OUR COMMITMENT** "To provide our customers with the best possible service, the highest quality products and the right solution for your needs"



## LITH-EX FIRE EXTINGUISHER

A high-performance fire extinguisher designed to combat lithium battery fires fast.

Extinguisher Type	LITH EX 1 L	LITH EX 2 L	LITH EX 6 L	LITH EX 9 L
Brim Full Capacity / ml	1,240	2,520	7,780	11,325
Fill Volume AVD Agent / ml	1,000	2,000	6,000	9,000
Approx. Weight Agent / kg	1.1	2.2	6.6	9.9
Approx. weight of Unit / kg	2.1	3.9	10.7	15.0
Cylinder Ø / mm	85	110	170	170
Cylinder Height / mm	320	380	522	664
Unit Height / mm	350	410	530	672
Handle	Metal - Red			
Hose	N/A		Yes with Magnet	
Base	Integral Base & Wall Bracket		Green PP	
Bracket			Wall Hanger	
Fire Rating	3A	5A	13A	13A
EN3 Certified	Not Allowed	Yes	Yes	Yes
Propellant	Nitrogen (He Tracer)			
Operating Pressure / bar *	15			
Operating Temperature	+5°C to +60°C			
Approx. Discharge Time / s	25	50	120	180
Discharge Range / m	1.5 - 2.0			
Packaged Unit l x w x h / mm	102 x 104 x 360	125 x 128 x 420	197 x 267 x 525	199 x 226 x 670
Units per Box	10	6	1	
Box Dimensions / mm	394 x 535 x 226	444 x 392 x 265	N/A	

## LITH-EX TROLLEY FIRE EXTINGUISHER

Achieve results that are unobtainable with conventional extinguishing agents and prevent the propagation of fire with a Lith-Ex 25 or 50 litre trolley fire extinguisher unit.

Extinguisher AVD Type	AVD 25 Litre	AVD 50 Litre
Volume of Agent / l	25	50
Agent	AVD	AVD
CE / PED	Yes	Yes
Aproximate Weight in Working Order / kg	55	100
Height ~ / mm	970 ±10	1090 ±10
Width / mm	558	558
Cylinder Ø / mm	350	350
Typical Hose Length / m	5	5
Propellant	Nitrogen (Helium Tracer) +5°C to +60°C	
Operating Temperature Range		
Working Pressure / bar *	8	8
Supply Bottle / bar	160	160
Discharge Time / mins	3.5	7
Attack Distance / m	5	5

## FIRE SUPPRESSION KIT

The kit includes an extinguisher to fight the fire and a bag for the safe suppression and removal of the extinguished device. The Lith-Ex fire suppression kit is designed for the safe storage of extinguished lithium battery devices, while reducing the risk of explosion once the flames have been put out.

The Lith-Ex Fire Suppression Kit includes:

- Fire resistant bag, designed to withstand temperatures of up to 1000°C
- Lith-Ex 500 ml Aerosol extinguisher or 1 litre extinguisher
- Safety glasses
- Safety gloves



## FIRE RESISTANT CONTAINER

The insulating properties of the lithium battery container allow for the safe storage and transportation of high-value flammable goods. Lithium batteries have the potential to ‘short’, leading to thermal runaway. This poses a fire risk to the surrounding environment if these batteries are not stored appropriately.

The AVD fire-resistant storage container acts as a thermal shield, reducing the threat of potential heat transfer. That makes it the perfect solution for transporting and storing potentially combustible products, such as batteries, fireworks and other flammable chemicals.



## BATTERY FIRE BLANKET

Blankets are capable of withstanding extremely high temperatures for a prolonged period of time as well as being robust enough to offer protection against potential debris and shrapnel expelled during a battery fire event.

Typical Properties:

- Working temperature up to 1000°C
- Fire resistant technical fabrics
- Fire resistant re-enforced multi-layered edge lining
- Fire resistant industrial stitching
- Handling loops on all corners



## FIRE RESISTANT CONTAINER

The Lith-Ex aerosol fire extinguisher is designed for safe use on small personal devices.

Model	Lith-Ex Aerosol
Fill Volume of AVD Agent / ml	500
Total Capacity of Canister / ml	794
Approx. Weight Agent / g	545
Approx. Weight of unit / g	690 +/- 15 (excluding clip)
Unit Height / mm	300
Unit Width / mm	canister 65 inc handle 95
Min. Working temp.	+5°C
Max. Working temp.	+50°C
Approx. Discharge Time / s	90
Approx. Discharge Range / m	2.0
Cylinder Test Pressure / bar	21
Extinguishing Agent	AVD-Li
Propellant	Nitrogen
Packaged Unit l x w x h / mm	100 x 72 x 320
Units per Box	6
Box Dimensions / mm	250 x 230 x 320



## PRODUCTS:

### *Gaseous Suppression*



Inert Gas (IG-01, IG-55, IG-100, IG-541)  
Novec 1230™ Fluid (FK-5-1-12)  
FM-200® (HFC-227ea.)  
Carbon Dioxide (CO<sub>2</sub>)  
Hybrid Systems (N<sub>2</sub> / Water)  
Pressure Relief Vents  
Enclosure Integrity Testing Equipment  
Pipe & Fittings

### *Water Suppression*



Water Mist - High Pressure  
Water Mist - Intermediate Pressure  
Water Mist - Low Pressure  
Hybrid Systems (Water / N<sub>2</sub>)  
Monitors & Delivery Systems  
High Speed Deluge

### *Foam Suppression*



Foam Concentrates  
Foam Proportioning  
Foam Delivery Systems  
Compressed Air Foam  
Foam Concentrate Testing

### *Explosion Protection*



Explosion Suppression  
Explosion Isolation  
Explosion Vents & Pressure Relief  
Spark Suppression  
Explosibility Testing

### *Fire Detection*



Linear Heat Detection - Digital  
Linear Heat Detection - Fibre Optic  
Linear Heat Detection - Micro Chip  
Flame Detection  
Video Imaging Detection  
Spark Detection  
Control & Indicating Equipment  
Thermal Imaging Detection  
Aspirating Smoke Detection

### *Military & Defence*



Military Vehicles  
Naval Vessels

### *Special Applications*



Micro Environment  
Oxygen Reduction  
Kitchen Protection Systems  
Dry Chemical  
Vehicle Systems  
Marine & Offshore  
Vapour Mitigation  
Li-Ion Fire Systems

### *Support Services*



Design / Engineering  
Technical Support  
Services & Testing

## Australia

### Head Office

Unit 1, 251 Ferntree Gully Road  
Mt Waverley VIC 3149  
Australia

### Brisbane Office

Unit 7, 93 Rivergate Place  
Murarrie QLD 4172  
Australia

### Perth Office

18 – 20 Ledger Road  
Balcatta WA 6021  
Australia

### Sydney Office

Unit 5, 11 Reliance drive Tuggerah  
NSW 2259  
Australia

**1300 742 296**

[www.fire-protection.com.au](http://www.fire-protection.com.au)  
[enquiries@fire-protection.com.au](mailto:enquiries@fire-protection.com.au)

## New Zealand

### Auckland Office

Unit 2, 13 Airborne Road  
Albany North Shore 0632  
New Zealand

**0011 64 9415 5488**

[www.fire-protection.net.nz](http://www.fire-protection.net.nz)

## South East Asia

[www.fire-protection.com.sg](http://www.fire-protection.com.sg)



**‘Every solution for your special hazard problems’**