



Electric vehicle fires require  
a different response.

Lithium battery fire extinguishers in accordance  
with technical standards for type approval and  
product inspection of Class D extinguishers

**LimEX**  
Li-30 13.6kg



Equipping apartment parking lots  
and Electric vehicle charging stations  
with Class D fire extinguishers  
is no longer an option, it's a requirement.

# Technical Standards for Type Approval and Product Inspection of Fire Extinguishers (Class D)

(All revised on March 3, 2023)

Fire extinguishers are legally required to be certified for domestic production and distribution in accordance with Article 37 of the Act on the Installation and Management of Fire Fighting Facilities, and in order to curb the indiscriminate use of unproven metal fire extinguishers without certification and inspection standards for D-class fire extinguishers to effectively extinguish metal fires, and to protect the lives and property of the public by mass-producing national standards of metal fire extinguishers to increase the response capability to metal fires, technical standards for type approval of metal fire extinguishers and product inspection in accordance with overseas standards (ISO 7165, UL711) were introduced. -Summary of the background of the fire department's promotion

## Technical Standards for Type Approval and Product Inspection of Class D Fire Extinguishers

- Fire extinguisher chemical composition: powder or granules mainly composed of sodium chloride, graphite and copper, etc.
- Fire extinguisher minimum Weight: 13.6 kg / apparent specific gravity: 0.8 or more
- Fire extinguishing performance test conditions
  - Fire model material composition: Magnesium alloy chips 2.7 kg or more
  - Test model: metal frame (width 600 x length 600 x height 300mm)  
steel floor (width 1m x length 1m, thickness 5mm or more)
  - First fire extinguishing test (Mg chip 100%), second fire extinguishing test (Mg chip 90% + cutting oil 10%) each 2 times
  - Wand nozzle to prevent fuel splatter required
- Pressure test: 3 times working pressure (30 bar)  
Burst pressure test: 6 times working pressure (60 bar)
- Indicator test: Pressure test
- Country of origin marking: Finished product unit

LiMEX fire extinguishers magnesium chip fire extinguishing test in accordance with the 「fire extinguishing test standards for class D extinguishers」 (2023.11.21)



# Class D Fire Extinguisher LiMEX Features

- LiMEX Brand : Lithium Metal (fire) Extinguisher
- Chemical Powder Name : Carbon Compound Ceramic Powder(3CP)
- Particle structure: Multi layer micro spherical powder
- Features
  - Smothering effect\* Cooling effect\* Chain-breaking reaction
  - Absorbs carbon dioxide generated during a fire and converts it into a second type of powdered agent (anti-catalytic extinguishing function)
  - Fast cooling effect due to rapid heat dissipation by graphene mixture
  - Micro-spherical particles have good fluidity and penetrate into corners like a fluid for effective fire extinguishing



## Related patents

- Korean Patent No. 10-2564844 : Extinguishing Materials for Lithium Batteries
- Korean Patent No. 10-2454923 : Fire extinguishing powder for metal and metal-ion batteries and method of making the same
- Korean Patent No. 10-2551591 : Aerosol fire extinguisher and methods of using them to extinguish fires



## Class D Fire Extinguisher LiMEX

Rotary Safety's Class D fire extinguisher LiMEX(Li-30/Li-30W) is the first product developed to meet the type approval and technical standards for Class D extinguishers. With the chemical agents and formulation technology developed and patented by our researchers, we are pioneering and moving forward on the road where no one has gone before. Be prepared for any accident by installing LiMEX fire extinguishers at electric vehicle charging facilities, which are the first in Korea to be tested for lithium battery fires and magnesium chips in accordance with the type-approved fire extinguishing test standards of Class D fire extinguishers.



## Top Demanders for Class D Fire Extinguishers

- Electric vehicle charging stations (apartments, rest areas, buildings)
- ESS energy storage
- UPS systems
- Battery storage centers
- Battery production plants
- Battery transportation facilities
- Electronics Exhibition Center
- Metal Plant
- Lithium Battery Recycling Plant
- Electric power equipment
- Department stores, supermarkets
- Electric transportation vessels
- Electric battery ships
- Kickboards
- E-bikes
- Electric scooters
- Golf cart charging stations
- Photovoltaics
- Labs
- Drones
- RC Toys
- Electric wheelchair

## Fire Safety Packages

- Gloves: Industrial gloves / chemical resistant gloves / cut resistant gloves / laboratory gloves
- Safety shoes: industrial safety shoes / fire safety shoes / cold weather safety shoes
- Masks: dust masks / fire masks
- Protective workwear: protective clothing / fire suits
- Safety protective equipment: Safety shoes / hard hats
- Firefighting / rescue: general fire extinguisher / rescue supplies

## Combination Products

### smothering Fire blanket Ricava Li68

Specializing in lithium battery fires

Reusable smothering fire blanket up to 30 times

Simple and effective solution for extinguishing fires by cutting off oxygen and preventing the spread of toxic gases and smoke

- Material: 100% fiberglass
- SIZE : 6,000X8,000mm
- Thickness : 0.45 0.05mm
- Heat resistance: 1100C for short time / 550C for long time



Storage



Stands



Heat Protection Gloves



Insulated Safety Boots

# Specification



- Model : Li-30
- DCP (dry chemical powder)  
weight : 13.6 kg
- Total Weight : 19.9 kg
- Height : 730 mm
- Diameter : 200 mm
- Discharge time : 110 초
- Discharge distance : 1 m
- Working Pressure : 0.9 Mpa
- Country of Manufacture : South Korea
- Manufacturer : Rotary Safety Co., Ltd.
- Customer Service : +82 2 2618 1124

## Comparison of fire extinguishing agents

Comparison item	LimEX Li-30	Amerex B-570
Main Ingredient	multi layer micro spherical powder	NaCl
Fire extinguishing Speed*	3.6 hour	14.0 hour
Specific Gravity*	1.0	>1.0
smothering effect*	Very high	Normal
Cooling effect*	Very high	High
Chain-breaking reaction	high	Normal
Class D Litium Fire	Available	low
Class D Metal Fire	Available	Available
Price (based on 10Kg)	Low Price	Very High Price

\*Korea Construction and Living Environment Testing Institute test data  
National Fire Research Institute test data



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