

Fire suppression within 90 seconds

# 119 PRODUCTS SERIES





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“ **It is an early suppression product of fire,  
leading to reduction of disaster damage** ”


SOO Co., Ltd. is specialized in special paint, rope, and sticker that suppresses fire caused by electric factor in enclosed space early. Since its inception as a technology-intensive venture company in 2016, all employees are united in a spirit of enthusiasm and challenge to create a safer world.

Halon gas is a gas for digestive medicines containing halogens bromine, and has been widely used as an extinguishing agent for fire extinguishers. However, it has been identified as an ozone depleting substance and has become a regulated substance in recent years. So, we have tried to develop safe fire extinguishing agents for people and environment without adversely affecting the atmosphere.

Finally, SOO Co., Ltd. developed an autonomous digestion system using microcapsules and concluded an exclusive contract with RUSINTECH, a patented Russian company, for technology agreements and products. In addition, we are rapidly growing as a partner receiving advanced technology. In addition to this, we will achieve customer satisfaction with advanced quality and innovative products through continuous R&D and investment.

Now, SOO Co., Ltd. is going beyond the Republic of Korea to the world. We have signed MOUs with companies in Japan, France, India, Nigeria, Malaysia, Vietnam, Philippines, etc. Through ingenious technology and thorough quality control. Please take a big step towards a hopeful tomorrow and watch the bright future of SOO Co., Ltd.

CEO **Deuk-Kyu, HWANG**



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**2016. 07** SOO Co., Ltd. Establish

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**2017. 04** Venture Business Certification(Technical Assurance Fund)  
Patent No. 10-1644707(Hydraulic liquid injection device with changeable injection direction)

**2017. 05** Company affiliated research institute certification(Korea Industrial Technology Association)

**2017. 08** Quality Management System ISO9001 certification  
Environmental Management System ISO14001 certification  
2017 Best New Products in Korea Grand Prize(Household goods)



**2017. 10** Busan crowdfunding road show IR Excellence Award

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**2018. 02** Certified as a company specialized in materials and parts(Ministry of Commerce, Industry and Energy)

**2018. 10** Patent application 10-2018-0120016(Two-component paint sprayer)  
Patent application 10-2018-0120017(Two-component paint sprayer)  
Patent application 10-2018-0120028(Two-component paint sprayer)



**2018. 11** Patent application 10-2018-0147613(Injector nozzle)  
Patent application 10-2018-0141802(Paint for initial fire suppression and method for manufacturing the same)  
Patent application 10-2018-0141811(Aerosol paint for initial fire suppression and method of manufacturing the same)

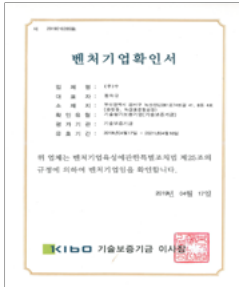
**2018. 12** Best Prize for IR Investment Engagement Competition

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**2019. 05** Best Prize for 2019 Safety New Technology Competition

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# Certifications and Awards



Venture Company Certification



KRICT affiliated research institute certification



Company specializing in materials and parts



Korea Industrial Technology Association membership certificate



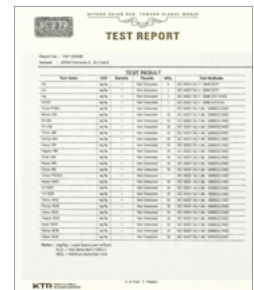
Korea Trade Association membership certificate



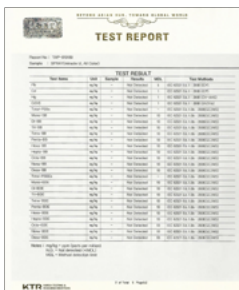
ISO 14001



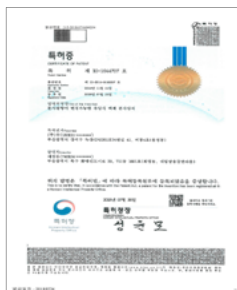
ISO 9001



ROHS Test report  
MIRACLE 2K PAINT(Epoxy)



ROHS Test report  
MIRACLE 2K PAINT(urethane)



Patent certificate



Design registration certificate



Trademark registration certificate (M2K)



Trademark registration certificate (MIRACLE 2K PAINT)



Dongui University Industry-University Cooperation Agreement



Best New Products in Korea Grand Prize



Busan crowdfunding road show IR Excellence Award

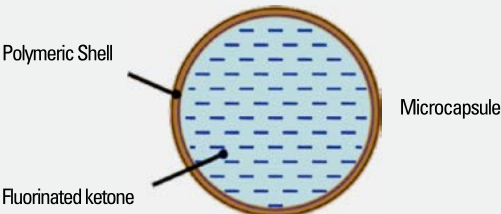


Best Prize for 2019 Safety New Technology Competition

# Introduction of Nanotechnology Technology

- SOO Co., Ltd.'s nanotechnology allows fire to evolve safely and quickly at an early stage. 119 The product series (Paint, Spray Paint, Rope, and Sticker) was developed with a focus on the non-invasive fire extinguishing principle which suppresses the chain reaction of combustion by inert materials.
- We developed a special pigment consisting of microcapsules (size: 50-500µm) filled with polymer cell used for high-performance extinguishing agent and nanofluorinated ketone. Matrix filled with this special pigment emits an extinguishing agent automatically in the event of a fire to suppress the fire early.

< Nanotechnology >

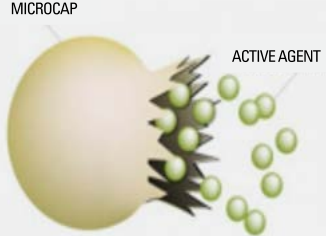


Microcapsule

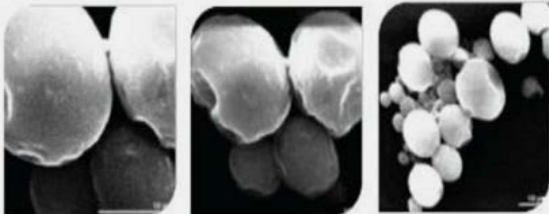
\* Fluorinated ketone

- Synthetic organic material 1.6 times heavier than water and no electricity
- Rapidly changing from a liquid state to a gaseous state and actively absorbing thermal energy of a flame
- Fire extinguishes without chemical reaction and evaporates immediately, It is safe to people and the environment because it is not toxic.
- It decomposes in the upper atmosphere by ultraviolet rays and is removed within 5 days.

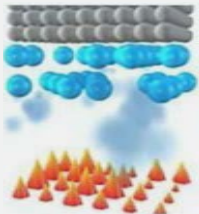
- If overheating, spark, or flame occurs, the microcapsules will collapse explosively to cope with A, B, C, E class fires.



< Principle of early suppression of fire >



< When a fire is detected, Popping microcapsules >



< Initial fire fighting >

\* MICROCAP : Automatically detects the temperature of 120°C -220°C and automatically releases fire extinguishing agent

\* ACTIVE AGENT : It prevents fire activation and suppresses chain reaction.

## ● Extinguish request test report



## ● Fire classification by grade

Fire classification		Combustibles
A class fire	General fire	Wood, paper, clothes, rubber, plastic, etc. Solid
B class fire	Oil fire	Fuel oil, lubricating oil, Grease, Paint
C class fire	Electric fire	Electric spark, electric short
D class fire	Metal fire	Sodium, magnesium, aluminum and other combustible metals
E class fire	Gas fire	LPG



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# 119PAINT

Electricity and communication device When a fire occurs, The extinguish capsule of The 119Paint reacts to suppress or extinguish the fire at an early stage.

### < How to use >

Paints and pigments in a ratio of 3.5:1 to paint the interior of electrical distribution boards, transformers, etc. and control boxes.

### < Product specifications >

Type	Container specification(L)	Max Protected Volume (L)	Actuation Temperature(°C)	Fire Classes	Operating Temperature(°C)	Validity Period (Months)
119PAINT	Pigment 0.5	80*	120±5	A,B,C,E	-40 / +65	60
	Paint 1					

(\*This 1L configuration is the maximum extinguish capacity available for 5 times.)





Fire suppression within 90 seconds 119 products series

# 119 SPRAY PAINT

When a fire occurs in an electrical or communication device, The extinguish capsule of 119Spray Paint responds to suppress the fire early.

## < How to use >

Spray inside electric, communication devices such as switchboards, distribution boards, transformers, and control boxes where fires are a concern.

## < Product specifications >

Type	Standard(ml)	Protected Volume(L)	Actuation Temperature(°C)	Fire Classes	Operating Temperature(°C)	Validity Period (Months)
119SPRAY PAINT	200	50	120±5	A,B,C,E	-40 / +65	60







Fire suppression within 90 seconds 119 products series

# 119ROPE

Electricity and communication device When a fire occurs, The extinguish capsule of The 119Rope reacts to suppress or extinguish the fire at an early stage.

### < How to use >

- ① Parallel installation in a form that surrounds downward the point 5cm ~ 10cm below the top of the protected object  
(When the rope is short, the new rope should be installed in the same way with a distance of 15cm ~ 30cm from the ② rope.)
- ② Please install the excess length freely along the outline of the protected object.
- ③ Replace if the shelf life of The 119Rope expires (60 months) or if there is evidence of burning.

### < Product specifications >

Type	Standard(m)	Protected Volume(L)	Actuation Temperature(°C)	Fire Classes	Operating Temperature(°C)	Validity Period (Months)
119ROPE 100	2.3	100	220±5	A,B,C,E	-40 / +65	60
119ROPE 200	3.4	200	220±5	A,B,C,E	-40 / +65	60
119ROPE 300	4.5	300	220±5	A,B,C,E	-40 / +65	60
119ROPE 500	6.3	500	220±5	A,B,C,E	-40 / +65	60
119ROPE 750	8.4	750	220±5	A,B,C,E	-40 / +65	60
119ROPE 1000	10.5	1000	220±5	A,B,C,E	-40 / +65	60





Fire suppression within 90 seconds 119 products series

# 119STICKER

Electricity and communication device When a fire occurs, The extinguish capsule of The 119Sticker reacts to suppress or extinguish the fire at an early stage.

## < How to use >

- ① Attach the 119Sticker of the standard which is suited to the digestion capacity to the inside upper part.
- ② Replace if the shelf life of The 119Sticker expires (60 months) or if there is evidence of burning.


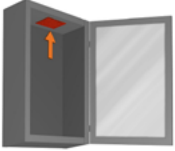




## < Product specifications >

Type	Standard(mm)	Protected Volume(L)	Actuation Temperature(°C)	Fire Classes	Operating Temperature(°C)	Validity Period (Months)
119STIKER SOCKET	40x25x1	0.5	120±5	A,B,C,E	-40 / +65	60
119STIKER 20	100x40x1	20	120±5	A,B,C,E	-40 / +65	60
119STIKER 30	100x100x1	30	120±5	A,B,C,E	-40 / +65	60
119STIKER 50	150x100x1	50	120±5	A,B,C,E	-40 / +65	60
119STIKER 65	200x100x1	65	120±5	A,B,C,E	-40 / +65	60



# Product Performance Table

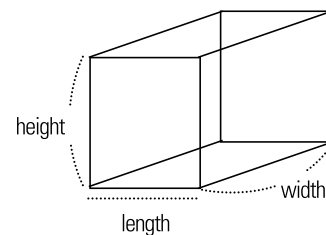
< Digestion capacity comparison table >

Standard	Maximum applicable capacity	Socket	20L	30L	50L	65L	70L	80L	100L	200L	300L	500L	750L	1000L	Examples of use
<b>119STICKER</b> 	40x25mm														
	100x40mm														
	100x100mm														
	150x100mm														
	200x100mm														
<b>119SPRAY PAINT</b>	200ml														
<b>119PAINT</b> 	3g														
	20g														
	50g														
	80g														
	100g														
	170g														
	200g														
<b>119ROPE</b> 	2.3 M														
	3.3 M														
	4.5 M														
	6.3 M														
	8.4 M														
	10.5 M														

< Usability comparison table >

Standard	Characteristics by product	Socket	20L	30L	50L	65L	70L	80L	100L	200L	300L	500L	750L	1000L
119STICKER	Fire extinguishing power													
	Workability													
	Adhesive property													
	Capacity 65L or less / Apply existing equipment													
119SPRAY PAINT	Fire extinguishing power													
	Workability													
	Adhesive property													
	Capacity 65L or less / Apply existing equipment													
119PAINT	Fire extinguishing power													
	Workability													
	Adhesive property													
	Capacity 80L or less / Applied when manufacturing new equipment / Price cheaper													
119ROPE	Fire extinguishing power													
	Workability													
	Adhesive property													
	Capacity 70L or more / Apply existing equipment													

< To calculate the volume >



$$V = H \times L \times W / 1,000$$

H : height(cm), L : length(cm), W : width(cm)

Example) height 50(cm), length 50(cm), width 20(cm) = 50L = 0.05

• 119 PRODUCT SERIES •



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