

## LITH-EX FIRE EXTINGUISHERS AVD - AQUEOUS VERMICULITE DISPERSION STORED PRESSURE FIRE EXTINGUISHERS

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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

**Product name:** Lith-Ex (AVD) Fire extinguishers  
**Product Codes:** 100-1576 (FLE1), 100-1577 (FLE2), 100-1578 (FLE6), 100-1579 (FLE9)  
**Substance:** Aqueous Vermiculite Dispersion  
**EC No.:** -  
**REACH Registration:** Exempt – see section 3  
**CAS No.:** 1318-00-09 (vermiculite)  
**Other names:** Vermiculite dispersion

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

##### Identified uses:

- Speciality fire extinguishing agent in a container pressurised with nitrogen gas for use as a fire extinguisher.

##### Uses advised against and reason:

- Not intended for other uses (no safe use data available).

#### 1.3 Details of the supplier of the safety data sheet

**Supplier:** Firechief Global  
**Address:** 3 Lands End Way, Oakham, Rutland  
**Postcode / Country:** LE15 6RB / United Kingdom  
**Telephone:** +44(0) 330 999 0019  
**Email:** sales@firechiefglobal.com

#### 1.4 Emergency telephone number

**Contact:** +44(0) 330 999 0019  
**Language:** English  
**Opening hours:** Available Monday to Friday (not bank holidays), 8 am to 5 pm (UK time)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:

Non-hazardous substance.

##### 2.1.2 Additional Information

Section 8 gives further information on the workplace exposure limit.

#### 2.2 Label elements

##### 2.2.1 Labelling according Regulation (EC) No 1272/2008 [CLP]:

###### Hazard Pictogram(s)

None

###### Signal word

None Hazard statement(s)

None

###### Precautionary statement(s)

None

###### Supplemental Hazard Information

None

#### 2.3 Other hazards

None.

This substance does not meet the criteria for PBT or vPvB according to Annex XIII of the REACH regulations.



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## SECTION 3: Composition/information on ingredients

## 3.1 Substances

Not applicable

## 3.2 Mixture

Chemical Name	EC No.	CAS No.	% Weight	REACH Registration No.	CLP classification according to Regulation (EC) 1272/2008
Vermiculite	-	1318-00-9	5 - 20 %	Exempt in accordance with Annex V.7	Not Classified.
Water	231-791-2	7732-18-5	80 - 95 %	Exempt in accordance with Annex IV	Not Classified.
Proprietary Ingredients*	N/A	N/A	<1 %	-	No hazardous substances.

**Pressurised with Nitrogen gas - a non-toxic, non flammable compressed gas - with helium gas as a tracer (leak detection).**

\* Rheology modifiers and syneresis control agents: registered or exempt from registration.

## SECTION 4: First aid measures

## 4.1 Description of first aid measures

## 4.1.1 General Information:

No serious adverse effects are anticipated.

If seeking medical advice - show this SDS to the medical professional.

## 4.1.2 Following inhalation:

Not anticipated. Aqueous product – treatment as for water.

Remove exposed person to fresh air; keep warm and at rest.

## 4.1.3 Following skin contact:

If irritation occurs then wash affected skin with plenty of soap and water.

Get medical attention if irritation persists after washing.

## 4.1.4 Following eye contact:

Immediately flush with clean water or eye wash solution, holding the eyelids apart for at least 15 minutes.

Seek medical attention if irritation persists.

## 4.1.5 Following ingestion:

There are no known adverse effects for small quantities and hence first aid measures are not usually required.

For larger quantities, wash mouth out with water and give water to drink. Do not induce vomiting.

If gastrointestinal symptoms occur then seek medical advice.

## 4.1.6 Self-protection of the first aider:

Spilt material may be a slip hazard.

Wear gloves to protect against skin irritation.

## 4.2 Most important symptoms and effects, both acute and delayed

## 4.2.1 General information:

Significant acute or delayed effects are not anticipated.

## 4.2.2 Symptoms and effects:

In rare circumstances the basic nature of AVD (pH ~9) may cause temporary irritation of the skin and/or eyes.

When this product has dried, mechanically generated dust may cause irritation to eyes, nose or throat.

## 4.3 Indication of any immediate medical attention and special treatment needed

## 4.3.1 Specific treatment:

A mild neutralising agent may be of benefit as vermiculite is a basic mineral (AVD has a pH ~9).

## 4.3.2 Notes for the doctor:

Treat symptomatically, no special antidote required.



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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### 5.1.1 General information:

Non-combustible substance; however, packaging and surrounding materials may be combustible.

#### 5.1.2 Suitable extinguishing media:

Use an extinguishing agent suitable for the surrounding fire.

#### 5.1.3 Unsuitable extinguishing media:

No product-specific restrictions.

### 5.2 Special hazards arising from the substance or mixture

#### 5.2.1 General information:

Spilt material may be a slip hazard.

#### 5.2.2 Hazardous combustion products:

Not applicable – non-combustible substance.

### 5.3 Advice for firefighters

No specific fire fighting equipment is required.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel:

Use personal protective equipment (Section 8) to protect eyes, skin and clothing.

Spilt material may be a slip hazard.

#### 6.1.2 For emergency responders:

Use personal protective equipment, see Section 8.

### 6.2 Environmental precautions

Prevent large quantities of product from entering drains, sewers or watercourses.

### 6.3 Methods and material for containment and cleaning up

#### 6.3.1 For containment:

Contain and absorb excess liquid with, for example, thermally-expanded vermiculite granules.

#### 6.3.2 For cleaning up:

Absorb excess product with absorbent non-combustible material (e.g. thermally-expanded vermiculite granules).

Sweep up and transfer; e.g. shovel, in to a suitable, labelled container.

#### 6.3.3 Disposal and other information:

Clear spills immediately to reduce slip hazard.

Dispose of in compliance with local and national regulations.

### 6.4 Reference to other sections

Suitable personal protective equipment is quoted in Section 8.

Further information on waste and disposal is given in Section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### 7.1.1 Protective Measures:

Spilt product should be treated as a slip hazard.

Wear personal protective equipment (see Section 8).

#### 7.1.2 Measures to prevent fire:

This product is non-flammable; no special fire protection measures are necessary.



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### 7.1.3 Measures to prevent aerosol and dust generation:

Reseal packaging when not in use.

Use engineering measures (e.g. local dust extraction) to provide effective control of dust from dry product or aerosol particulates in order to ensure compliance with the current Occupational Exposure Limits.

### 7.1.4 Measures to protect the environment:

Do not dispose of excess material or spillages into the drains.

### 7.1.5 Advice on general occupational hygiene:

Wash hands after use and regularly during use especially if contaminated.

In working areas do not eat, drink or smoke when using this product.

Remove contaminated clothing and protective equipment before entering eating areas.

## 7.2 Conditions for storage, including any incompatibilities

### 7.2.1 Technical measures and storage conditions:

Store in original packaging.

Protect packaging from damage.

### 7.2.2 Requirements for storage rooms and vessels:

- Replace lids when not in use.
- Store between 5 °C and 25 °C where at all possible; above 25 °C increased water evaporation may lead to drying out of the product but otherwise the product is stable up to at least 80 °C.
- Do not freeze as the product will not flow when solid and the associated expansion may damage the packaging. AVD is not damaged by freezing but will require re-homogenisation (stirring) after thawing.

### 7.2.3 Further information on storage:

None.

## 7.3 Specific end use(s)

### Recommendations:

Observe instructions for use. Use of this product is restricted to "professional user".

Wear a suitable mask if local dust extraction does not reduce dust levels below the WEL (See Section 8).

Wear protective clothing including gloves and goggles.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters Substance CAS Number EH40/2005 Workplace exposure limits

Substance	CAS Number	EH40/2005 Workplace exposure limits
Vermiculite	1318-00-09	Substance not listed in EH40/2005. For WELs (of dried material), treat as nuisance dust (EH40 section 44): 10 mg m-3 (Inhalable dust) / 4 mg m-3 (Respirable dust)

## 8.2 Exposure controls

### 8.2.1 Appropriate engineering controls:

Local dust extraction (for aerosol particulates or dust from dried product).

### 8.2.2 Individual protection measures:

**Hands:** Protective gloves if required – no specific type recommended. Wash hands after each work session.

**Eyes:** Goggles or mask – no specific type recommended.

**Skin:** Wear appropriate PPE, protective work clothing. Wash contaminated clothing before reuse

**Respiratory:** In cases of prolonged exposure to airborne dust or aerosol concentrations, wear respiratory protective equipment that complies with European or national legislation – no specific recommendation.

**General:** Protective overalls. Soiled clothing must be adequately laundered to avoid becoming a dust source.

### 8.2.3 Environmental exposure controls:

Use appropriate engineering controls to prevent dust escaping to the atmosphere



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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

a) Appearance:	Gold / brown liquid suspension
b) Odour:	Slight earthy smell
c) Odour threshold:	No data available
d) pH:	Alkaline: 7 - 10
e) Melting point/freezing point:	Melting point of dried material > 1300 °C
f) Initial boiling point and boiling range:	Aqueous component b.p. approx. 100 °C
g) Flash point:	Not applicable – Not flammable
h) Evaporation rate:	No data available
i) Flammability (solid, gas):	Not flammable
j) Upper/lower flammability or explosive limits:	No data available
k) Vapour pressure:	No data available
l) Vapour density:	No data available
m) Relative density:	Approx. 1.1
n) Solubility(ies):	Product is miscible with water
o) Partition coefficient: n-octanol/water:	No data available
p) Auto-ignition temperature:	No data available
q) Decomposition temperature:	No data available
r) Viscosity:	No standardised data available
s) Explosive properties:	Not explosive
t) Oxidising properties:	No data available

#### 9.2 Other information

None available

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

No data available

#### 10.2 Chemical stability

Stable under normal conditions.

#### 10.3 Possibility of hazardous reactions

No data available.

#### 10.4 Conditions to avoid

No data available.

#### 10.5 Incompatible materials

No data available.

#### 10.6 Hazardous decomposition products

No data available.



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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

- a) **Acute Toxicity**  
No data available.
- b) **Skin corrosion/irritation**  
No data available.
- c) **Serious eye damage/irritation**  
No data available..
- d) **Respiratory or skin sensitisation**  
No data available. .
- e) **Germ cell mutagenicity**  
No data available.
- f) **Carcinogenicity**  
No data available.
- g) **Reproductive toxicity**  
No data available.
- h) **STOT-single exposure**  
No data available.
- i) **STOT-repeated exposure**  
No data available.
- j) **Aspiration hazard**  
No data available.

#### 11.2 Information on likely routes of exposure

No data available.

#### 11.3 Other information

None .

### SECTION 12: Ecological information

#### 12.1 Toxicity

No data available

#### 12.2 Persistence and degradability

No data available.

#### 12.3 Bioaccumulative potential

No data available.

#### 12.4 Mobility in soil

No data available.

#### 12.5 Results of PBT and vPvB assessment

PBT / vPvB assessment not available as chemical safety assessment not required / not conducted.

No components are included in the EU candidate list of substances of very high concern (SVHCs).

#### 12.6 Other adverse effects

No adverse effects expected if regulations and advice for storage and handling are observed.

### SECTION 13: Disposal considerations

#### 3.1 Waste treatment methods

This product is not classified as hazardous waste under the EC Directive 2008/98/EC or as hazardous waste under the Hazardous Waste (England and Wales) Regulations SI 2005 No.894.

Dispose of according to national / regional legislation.



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### SECTION 14: Transport information

**14.1 UN number**

UN1044.

**14.2 UN proper shipping name**

FIRE EXTINGUISHER with compressed or liquefied gas

**14.3 Transport hazard class(es)**

2.2.

**14.4 Packing group**

Transport Category 3, Tunnel code E, Packaging Code 4G.

**14.5 Environmental hazards**

Not classified.

**14.6 Special precautions for user**

Not applicable.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

### SECTION 15: Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**EU REGULATIONS**

**Regulation (EC) No. 2037/2000 (substances that deplete ozone)**

Not applicable

**Regulation (EC) No. 850/2004 (persistent organic pollutants)**

Not applicable

**Regulation (EC) No.689/2008 (concerning the export and import of dangerous chemicals)**

Not applicable

**Regulation (EC) No. 1272/2008 (Classification, Labelling and Packaging of substances and mixtures)**

This material does not meet any of the criteria.

Lith-ex Aerosols are classed as an 'Article' and do not contain any substances listed on the candidate list of Substances of Very High Concern.

**Registration, Evaluation, Authorisation & Restriction of Chemicals (REACH)**

The mineral vermiculite is a naturally occurring product and, hence, article 2 (7) (b) and Annex V paragraph 7 of the REACH regulations exempts this material from REACH registration.

**US FEDERAL REGULATIONS**

Vermiculite is listed on the United States TSCA (Toxic Substances Control Act) inventory.

**Source of Reference for OELs**

HSE EH40 for Workplace Exposure Limits

**15.2 Chemical safety assessment**

No chemical safety assessment has been carried out by the supplier.



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### SECTION 16: Other information

**i. Abbreviations and acronyms**

REACH: Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals. CLP: Regulation (EC) No 1272/2008 on the Classification, Labelling and Packaging of substances and mixtures.  
WEL: 8 h TWA – Workplace Exposure Limit: 8 hour Time Weighted Average

**ii. Key Literature References and Sources of Data**

- a) Guidance Note EH40 Occupational Exposure Limits is published annually by the Health and Safety Executive. The latest relevant limits should be observed.
- b) HS(G) 37 1993 "An introduction to Local Exhaust Ventilation" and Guidance Note EH44 2013 "Dust in the Work Place" are both available from HM Stationery Office.
- c) Advice on respiratory protective equipment is also given in BS EN 529:2005.
- d) EN166: 2002 Personal Eye Protection.

**iii. Procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008 CLP**

This material is not classified under this regulation.

**iv. Training Advice**

All employees should be given adequate training in the proper use and handling of this product and any precautions and protective equipment required under applicable regulations

The information given on this Safety Data Sheet is to the best of Firechief Globals' knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the users' responsibility to satisfy themselves as to the suitability and completeness of the information for their own particular use.

