SECTION 1: Identification of the substance / preparation and of the company

1.1 Product identifier

Lockwell FS 11

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

1.2.1 Relevant uses

Intumescent fire retardant coatings

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

LOCKWELL SYSTEMS LLC
10028, West Road, Houston,
Texas, USA
P: +281-807-6111
F: +281-807-6277

Address enquiries to
Technical information contact@lockwellsystems.com
Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency phone

Company

Tel: (662) 181-9738 Fax: (662) 181-9742

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

No classification.

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC

No classification.

2.2 Label elements

The product is required to be labelled in accordance with EC-Directives.

Labelling according to Regulation 67/548/EEC or 1999/45/EC

Hazard symbols none
R-phrases none
Special labelling Safety data sheet available for professional user on request.
2004/42/CE 0 g/l II A i WB One-pack performance coatings (max. 140 g/l)

2.3 Other hazards

Human health dangers Frequent persistent contact with the skin can cause skin irritation.
Environmental hazards Does not contain any PBT or vPvB substances.
Other hazards Further hazards were not determined with the current level of knowledge.
SECTION 3: Composition / Information on ingredients

3.1 Product-type:
The product is a mixture.

<table>
<thead>
<tr>
<th>Range [%]</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - &lt;5</td>
<td>Tris(2-chloro-1-methylethyl) phosphate</td>
</tr>
</tbody>
</table>

CAS: 13674-84-5, EINECS/ELINCS: 237-158-7, ECB-Nr.: 01-2119486772-26-xxxx
GHS/CLP: Acute Tox. 4: H302
EEC: Xn, R 22

Comment on component parts
Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
Change soaked clothing.

Inhalation
Ensure supply of fresh air.
In the event of symptoms seek for medical treatment.

Skin contact
When in contact with the skin, clean with soap and water.
Consult a doctor if skin irritation persists.

Eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Supply with medical care.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

Ingestion

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.

Extinguishing media that must not be used
Full water jet.

5.2 Special hazards arising from the substance or mixture

Unknown risk of formation of toxic pyrolysis products.
Carbon monoxide (CO)
Nitrogen oxides (NOx).
Phosphorus oxides (POx).
Chlorine compounds.

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

High risk of slipping due to leakage/spillage of product.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.
6.3 Methods and material for containment and cleaning up

Take up mechanically.
Take up residues with absorbent material (e.g. sand).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide suitable vacuuming at the processing area.
Use only in well-ventilated areas.

Use barrier skin cream.
Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Do not store together with food and animal food/diet.
Keep container tightly closed.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

<table>
<thead>
<tr>
<th>Range [%]</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - &lt;25</td>
<td>Pentaerythritol</td>
</tr>
<tr>
<td></td>
<td>CAS: 115-77-5, EINECS/ELINCS: 204-104-9, ECB-Nr.: 01-2119473985-20-XXXX</td>
</tr>
<tr>
<td></td>
<td>Long-term exposure: 10 mg/m³, inhalable dust, respirable dust: TWA=4 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Short-term exposure (15-minute): 20 mg/m³</td>
</tr>
<tr>
<td>1 - &lt;10</td>
<td>Titanium dioxide</td>
</tr>
<tr>
<td></td>
<td>Long-term exposure: 4 mg/m³, respirable; total inhalable: TWA=10 mg/m³</td>
</tr>
</tbody>
</table>

DNEL

<table>
<thead>
<tr>
<th>Range [%]</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - &lt;5</td>
<td>Tris(2-chloro-1-methylethyl) phosphate, CAS: 13674-84-5</td>
</tr>
<tr>
<td></td>
<td>Industrial, dermal, Long-term - systemic effects: 2,08 mg/kg bw/day.</td>
</tr>
<tr>
<td></td>
<td>Industrial, inhalative, Long-term - systemic effects: 5,82 mg/m³.</td>
</tr>
<tr>
<td></td>
<td>Industrial, inhalative, Acute - systemic effects: 22,4 mg/m³.</td>
</tr>
<tr>
<td></td>
<td>Industrial, dermal, Acute - systemic effects: 8 mg/kg bw/day.</td>
</tr>
</tbody>
</table>

PNEC

<table>
<thead>
<tr>
<th>Range [%]</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - &lt;5</td>
<td>Tris(2-chloro-1-methylethyl) phosphate, CAS: 13674-84-5</td>
</tr>
<tr>
<td></td>
<td>sediment (marine water), 1,34 mg/kg dwt.</td>
</tr>
<tr>
<td></td>
<td>soil, 1,7 mg/kg dwt.</td>
</tr>
<tr>
<td></td>
<td>marine water, 0,064 mg/l.</td>
</tr>
<tr>
<td></td>
<td>fresh water, 0,64 mg/l.</td>
</tr>
<tr>
<td></td>
<td>sediment, 13,4 mg/kg dwt.</td>
</tr>
<tr>
<td></td>
<td>sewage treatment plants (STP), 7,84 mg/l.</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Additional advice on system design
- Ensure adequate ventilation on workstation.

Eye protection
- Safety glasses.

Hand protection
- Butyl rubber, >480 min (EN 374).
- The details concerned are recommendations. Please contact the glove supplier for further information.

Skin protection
- Not required under normal conditions.

Other
- Avoid contact with eyes and skin.
- Do not inhale aerosols.

Respiratory protection
- Breathing apparatus in the event of high concentrations.
- Short term: filter apparatus, combination filter A-P2.

Thermal hazards
- Not applicable

Delimitation and monitoring of the environmental exposition
- Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>pasty</td>
</tr>
<tr>
<td>Color</td>
<td>white</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>not determined</td>
</tr>
<tr>
<td>pH-value</td>
<td>6.5 - 8.5</td>
</tr>
<tr>
<td>pH-value [1%]</td>
<td>not determined</td>
</tr>
<tr>
<td>Boiling point [°C]</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point [°C]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Flammability [°C]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>not applicable</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>not applicable</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>no</td>
</tr>
<tr>
<td>Vapour pressure/gas pressure [kPa]</td>
<td>not determined</td>
</tr>
<tr>
<td>Density [g/ml]</td>
<td>1.18 - 1.28</td>
</tr>
<tr>
<td>Bulk density [kg/m³]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>soluble</td>
</tr>
<tr>
<td>Partition coefficient [n-octanol/water]</td>
<td>not determined</td>
</tr>
<tr>
<td>Viscosity</td>
<td>8000 - 14000 mPa.s (20°C)</td>
</tr>
<tr>
<td>Relative vapour density determined in air</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation speed</td>
<td>not determined</td>
</tr>
<tr>
<td>Melting point [°C]</td>
<td>not determined</td>
</tr>
<tr>
<td>Autoignition temperature [°C]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>not determined</td>
</tr>
</tbody>
</table>

9.2 Other information
- None

SECTION 10: Stability and reactivity

10.1 Reactivity

- No dangerous reactions known if used as directed.

10.2 Chemical stability

- The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

- No hazardous reactions known.
10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

not determined

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Range [%]</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - &lt;5</td>
<td>Tris(2-chloro-1-methylethyl) phosphate, CAS: 13674-84-5</td>
</tr>
<tr>
<td></td>
<td>LC0, inhalative, Rat: &gt; 7 mg/l 4h.</td>
</tr>
<tr>
<td></td>
<td>LD50, dermal, Rat: &gt; 2000 mg/kg.</td>
</tr>
<tr>
<td></td>
<td>LD50, oral, Rat: &gt; 500 -2000 mg/kg.</td>
</tr>
</tbody>
</table>

Serious eye damage/irritation not determined
Skin corrosion/irritation not determined
Respiratory or skin sensitisation not determined
Specific target organ toxicity — single exposure not determined
Specific target organ toxicity — repeated exposure not determined

Mutagenicity
There is no evidence of any mutagenic effects.

Reproduction toxicity
There is no evidence of any reproductive toxicity effects.

Carcinogenicity
There is no evidence of any carcinogenic effects.

General remarks
No classification on the basis of the calculation procedure of the preparation directive.
Toxicological data of complete product are not available.
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Range [%]</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - &lt;5</td>
<td>Tris(2-chloro-1-methylethyl) phosphate, CAS: 13674-84-5</td>
</tr>
<tr>
<td></td>
<td>LC50, (96h), Pimephales promelas: 51 mg/l.</td>
</tr>
<tr>
<td></td>
<td>IC50, (72h), Algae: 82 mg/l.</td>
</tr>
<tr>
<td></td>
<td>EC50, (48h), Daphnia magna: 131 mg/l.</td>
</tr>
<tr>
<td></td>
<td>EC50, (3h), Bacteria: 784 mg/l.</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Behaviour in environment compartments not determined
Behaviour in sewage plant not determined
Biological degradability not determined

12.3 Bioaccumulative potential

not determined

12.4 Mobility in soil

not determined
12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

No classification on the basis of the calculation procedure of the preparation directive. Ecological data of complete product are not available. The product contains organically bound halogen in accordance with the formulation. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Coordinate disposal with the authorities if necessary.

Waste no. (recommended) 080112

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packing that cannot be cleaned should be disposed of as for product.

Waste no. (recommended) 150102 150104

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID

NO DANGEROUS GOODS

Inland navigation (ADN)

NO DANGEROUS GOODS

Marine transport in accordance with IMDG

NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
not applicable

SECTION 15: Regulatory information

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


- Observe employment restrictions for people: no
- VOC (1999/13/CE): 0%

15.2 Chemical safety assessment
not applicable

SECTION 16: Other information

16.1 R-phrases (SECTION 3)
R 22: Harmful if swallowed.

16.2 Hazard statements (SECTION 3)
H302 Harmful if swallowed.

16.3 Abbreviations and acronyms:
- ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
- RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
- ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
- CAS = Chemical Abstracts Service
- CLP = Classification, Labelling and Packaging
- DMEL = Derived Minimum Effect Level
- DNEL = Derived No Effect Level
- EC50 = Median effective concentration
- ECB = European Chemicals Bureau
- EEC = European Economic Community
- EINECS = European Inventory of Existing Commercial Chemical Substances
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
- ICS0 = Inhibition concentration, 50%
- IMDG = International Maritime Code for Dangerous Goods
- IUCLID = International Uniform Chemical Information Database
- LC50 = Lethal concentration, 50%
- LD50 = Median lethal dose
- MARPOL = International Convention for the Prevention of Marine Pollution from Ships
- PBT = Persistent, Bioaccumulative and Toxic substance
- PNEC = Predicted No-Effect Concentration
- REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
- TLV®/TWA = Threshold limit value – time-weighted average
- TLV®STEL = Threshold limit value – short-time exposure limit
- VOC = Volatile Organic Compounds
- vPvB = very Persistent and very Bioaccumulative

16.4 Other information
Modified position: none

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