

**SAFETY DATA SHEET**  
**according 91/155/EWG Page 1 from 7**



Product name: VMK Chemical Cartridge  
Producer: K-A-L-M Befestigungssysteme GmbH  
Date of issue: 22.09.2000

## 1 Chemical product and company identification

### 1.1 Product Data

Trade name:	VMK
Product code:	10.201.xx/10.202.xx/201.xx.000/202.xx.000

### 1.2 Manufacturer Data

Manufacturer:	K-A-L-M Befestigungssysteme GmbH
Address:	Liebigstr. 11
	D-67661 Kaiserslautern
Phone No.:	+49-631-3 51 14 -0
Fax No.:	+49-631-3 51 14 -24

## 2 Composition/information on ingredients

### 2.1 Chemical characteristics:

Component A:	Unsaturated modified vinyl ester resin in styrene
Component B:	Dibenzoylperoxid, filled.

### 2.2 Hazardous components

CAS-number	Hazardous components	concentration g/kg	symbols	R-phrases
94-36-0	Dibenzoylperoxid	<12	X <sub>i</sub>	43
100-42-5	Styrene	<120	X <sub>n</sub>	10-20-36/38

## 3 Composition/information on ingredients

Adverse human health effects:	Flammable. Harmful by inhalation. Irritating to eyes and skin.
Adverse environmental effects:	May cause long-term adverse effects in the aquatic environment.

## 4 First-aid measures

General instructions:	Remove contaminated soaked clothing immediately and dispose of safety.
In case of inhalation:	Remove the casualty into fresh air and keep him calm. Refer for medical treatment.
In case of skin contact:	In case of contact with skin wash off immediately with soap and water.
After contact with eyes:	Wash off with plenty of water for at least 10 minutes, summon a medical practitioner.
After ingestion:	Rinse out mouth and give plenty of water to drink. Refer for medical treatment.

**SAFETY DATA SHEET**  
**according 91/155/EWG Page 2 from 7**



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## 5 Fire-fighting measures

Suitable extinguishing media:	Foam, water, dry powder, carbon dioxide.
Extinguishing media that must not be used for safety reasons:	No data available.
Special hazards from the substance itself, its combustion products or liberating gases:	In the event of fire the following can be released: Carbon monoxide (CO) carbon dioxide. (CO <sub>2</sub> ).
Special protective equipment for fire fighters:	Use breathing apparatus.

## 6 Accidental release measures

Precaution for persons:	Use personal protective clothing.
Arrangements for pollution control:	Do not discharge into the drains/surface waters/groundwater.
Cleaning/take-up-process:	Take up mechanically. Contain with absorbent material (e.g. sand, silica gel, acid binder, general purpose binder, sawdust).

## 7 Handling and storage

### 7.1 Handling

Instructions for safe handling:	Keep tightly closed in a dry, cool and well ventilated place. Protect against heat.
Instructions for fire- and explosion protection:	Keep away from sources of ignition. Do not smoke.

### 7.2 Storage

Requirements for storage rooms and vessels:	Keep tightly closed in a dry, cool and well ventilated place. Protect against heat.
Vessel content:	75/ 150/ 235/ 310/ 330/ 345/ 380 ml.
Vessel species/material:	Plastic-cartridge.
Advice on storage compatibility:	Do not store with combustible materials.
Storing temperature min.:	5°C
Storing temperature max.:	25°C
Storage class:	3A.
Further hints:	Keep locked up and out of reach of children. Protect from frost. Protect from light.

**SAFETY DATA SHEET**  
**according 91/155/EWG Page 3 from 7**



Product name: VMK Chemical Cartridge  
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Date of issue: 22.09.2000

**8 Exposure controls/personal protection**

**8.1 Additional instructions for construction of technical installation:**  
Keep away from sources of ignition. No smoking.

**8.2 Constituents with working-place corresponding to be controlled limits**  
Components:

CAS-number	name of component	lim. Value	unit
100-42-5	Styrene		20 ml/m <sup>3</sup>

**8.3 Personal protective outfit**

General protection and hygienic measures:	Do not inhale vapours. Avoid contact with skin.
Breathing mask:	Breathing apparatus in the event of high concentrations.
Hand protection:	Protective gloves.
Eye protection:	Goggles.
Body protection:	Light protective clothing.

**9 Physical and chemical properties**

**9.1 Appearance**

Form:	Paste.
Colour:	Green or red.
Odour:	Characteristic (Styrene).

**9.2 Safe relevant data**

Boiling point/ range from:	145°C (Styrene).
<i>Remark:</i>	Boiling point (Styrene).
Melting point/range from:	
<i>Remark:</i>	Not applicable.
Flash point:	34°C (Styrene).
Ignition point:	>400°C
<i>Remark:</i>	Styrene.
Burning stimulating features:	No data available.
Explosion hazard	
Lower explosion limit:	1.1 Vol. %
Upper explosion limit:	8.0 Vol. %

**SAFETY DATA SHEET**  
**according 91/155/EWG Page 4 from 7**



Product name: VMK Chemical Cartridge  
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### 9.3 Further Data

Density :	1.1000 (g/cm <sup>3</sup> ):
<i>Remark:</i>	At 20°C
Solubility:	Solubility in water: (20°C) 300 mg/l (approx.) Solubility in other solvents: acetone, dichloromethane.
Vapour pressure (mbar):	10
<i>Remark:</i>	Styrene (20°C).
Viscosity:	2700 (mPas).
<i>Remark:</i>	At 20°C
Solvent-dissociating-control:	No data available.
Solvent-volume:	< 22.0 weight %.
<i>Remark:</i>	Not applicable.
Further information:	Not applicable.

### 10 Stability and reactivity

Hazardous reactions:	Heat develops during polymerisation.
Hazardous decomposition products:	The following can be given off in a fire: carbon monoxide, carbon dioxide (CO <sub>2</sub> ).
Thermal decomposition:	Component B: Decomposition begins with temperatures above 50°C

### 11 Toxicological information

#### 11.1 Acute toxicity

Acute oral toxicity:	LD50 rat: 5000 mg/kg (Styrene).
Acute inhalant. toxicity:	No data available.
Acute dermal toxicity:	No data available.
Irritant effect on skin:	Irritant.
Irritant effect on eyes:	Irritant.
Sensitisation:	Sensitising.

11.2 Other information: The toxicological data are those of the solvent.

#### 11.2.1 Algae toxicity

### 12 Behaviour in sewage treatment plants:

12.1 When low concentrations are discharged correctly into adapted biological treatment plants, interference with the degradation activity of activated sludge is not likely.

#### 12.2 General remarks:

Insoluble. Do not discharge product into natural waters without pre-treatment (biological treatment plant).

**SAFETY DATA SHEET**  
**according 91/155/EWG Page 5 from 7**



Product name: VMK Chemical Cartridge  
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Date of issue: 22.09.2000

### 13 Disposal considerations

#### 13.1 Disposal considerations

Advises:	Non-cured: Must be disposed of by special means, e.g. suitable incineration, in accordance with local regulations. Cured: Can be dumped with domestic or incinerated in suitable plant in accordance with local regulations.
Waste code:	070208; 150199 D1
Name of waste (only for Germany):	Packing materials with harmful impurities or residuals, mainly inorganic.

#### 13.2 Disposal of contaminated packaging

Advises:	Contaminated packaging should be emptied as far as possible and after appropriate cleaning may be taken for reuse. Packaging that cannot be cleaned should be disposed of as for product.
Waste code:	070208; 150199 D1
Name of waste (only for Germany):	Resin residue, cured.
Recommended cleansing agent:	PU-cleaner.

### 14 Transport information

#### 14.1 Land transport ADR/RID and DOT/OGT (crossing frontier/home)

Class:	3
Figure/letter:	31 C
Hazard No.:	030
Material No.:	1866
Product named:	Resin solution
Hazard ticket:	
Remark:	

#### 14.2 Inland waterways transport ADB/ADNR

Class:	3
Figure/letter:	31 C
Category:	
Product name:	Resin solution
Remark:	

**SAFETY DATA SHEET**  
according 91/155/EWG Page 6 from 7



Product name: VMK Chemical Cartridge  
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**14.3 Sea transport IMDG/GGVSea**

Class:	3.3
UN-No.:	1866
Packing Group:	
EMS-No.:	3-05
MFAG:	310
Marine pollutant:	Yes
Correct technical name:	Resin solution in flammable liquid (contains Styrene).
Hazard release:	
Label:	
Remark:	No data available.

**14.4 Aircraft transport ICAO-TI and IATA-DGRA**

Class:	3
Sub. risc:	
UN/ID-No.:	1866 III
Correct technical name:	Resin solution in flammable liquid (contains Styrene).
Packing group:	
Packing instruction No. passenger:	
Packing instruction No. cargo:	
Label:	L No. 4 inflammable/solid s.
Remark:	No data available.

14.5 Transport / Further information: Permitted, up to 1000 ml per parcel

**15 Regulatory information**

**15.1 Data for labelling acc. GefStoffV /EC-regulations**

Labelling:	The product is classified and labelled in accordance with EC directives/German regulations on dangerous substances.	
Special labelling for certain preparations:	No data available.	
Hazard symbols:	X <sub>n</sub> -Harmful.	
Hazardous components to be indicated on label contains:	Styrene, EEC-No. 601-026-00-0.	
R-Phrases:	R 10	Flammable.
	R 20	Harmful by inhalation.
	R36/38	Irritating to eyes and skin.
S-phrases:	S ½	Keep locked up and out of the reach of children.
	S 3	Keep in a cool place.
	S 23	Do not breathe vapour.
	S 36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	S 51	Use only in well ventilated areas.

SAFETY DATA SHEET  
according 91/155/EWG Page 7 from 7



Product name: VMK Chemical Cartridge  
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15.2 National regulation

Note restriction of occupation:	No data available.
Note decree for case of interference( German only):	No data available.
Classification according to VbF (German only):	Not regulated.
Technical regulation air (German only):	II
<i>Remark:</i>	§ 3.1.7
Water hazard class:	2 self-classification.
Other regulations, restrictions and prohibition regulations (German only)	
Note control range of TRG/TRGS:	No data available.
Note regulations to accident prevention:	No data available.
Note working-medical principles:	No data available.
Note further regulation:	Any existing national regulations for handling of polyester/epoxy resins and substances harmful to fruit should be observed.

This information is based on our present state of knowledge. They describe our product in view of the requirements for safety. They don't assure of certain properties of the product. A legal relationship is not vested.

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