

Material Safety Data Sheet
 according to 91/155/EEC

Trade name: WLK (Liquid Epoxy Hardener)	Page 1 of 12
<u>1.) Substance / preparation and company name</u>	
Product details	
Trade name:	WLK (liquid epoxy hardener)
Supplier:	Fischer Elektronik GmbH & Co. KG Nottebohmstr. 28 • 58511 Lüdenscheid Phone: + 49 (0) 2351/435-0 / Fax. + 49 (0) 2351/45754
Department responsible for information:	Technical Service
Emergency Service:	National Information Centre, Berlin Emergency call: + 49 (0)30 19240
<u>2.) Composition / Information on ingredients</u>	
Chemical characterization (substance)	
<i>Description:</i> Aliphatic Polyamine	
<i>Hazardous ingredients:</i>	
CAS-no.: 4246-51-9	
<i>Designation to EC directive:</i> 4,7,10-Trioxa-1, 13-tridecandiamine	
<i>Content:</i>	> 90 <i>Unit: Weight %</i>
<i>Hazard Symbol:</i>	C <i>R-phrases :</i> 34
<i>Additional Information:</i>	4,7,10-Trioxa-1, 13-tridecandiamine (EINECS 224-207-2, UN 2735, RTECS ID 6475000, BRN 1760709)

Material Safety Data Sheet
 according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 2 of 12

3.) Hazards identification

Definition of hazard: C (caustic)

Special information on the danger to human and environment: Causes burns to eyes, respiratory tract and skin. The product is hazardous to waters.

4.) First aid measures

General information: Consult a physician if problems persist.

In case of inhalation: Breath fresh air, respiration if necessary. Seek medical assistance immediately. **Caution: Danger of burns**

In case of skin contact: Rinse with plenty of water, remove contaminated clothing. Wash carefully using water and soap. Avoid rubbing the skin. Consult a physician if problems persist.

In case of eye contact: Keep eye lids open and rinse for at least 15 minutes with plenty of water. Seek immediately advice of an eye specialist. Protect the eye which has not been in contact with the agent.

In case of ingestion: Do not initiate vomiting. The patient should drink plenty of water, if conscious. Get medical assistance immediately.

Information to physician: Symptomatic treatment, see also safety specification sheet.

5.) Fire fighting measures

Suitable extinguishing media: Carbon dioxide, extinguishing powder, foam (resistant to alcohol), water spray jet

Extinguishing media which may not be used for safety reasons: N/A

Special exposure hazards arising from the substance of preparation itself, combustion products, resulting gases:

Carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides, pyrolysis products (smoke). In case of fire, closed containers may burst. Cool with water.

Special protective equipment: Chemical-resistant protective clothing including a breathing mask with it's own air supply

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 3 of 12

6.) Accidental release measures

Personal precautions: Ventilate the area or suck the air off using mobile equipment. Wipe or absorb the liquid using a 'vermiculite' type of material. Use protective clothing including goggles, gloves and shoes.

Environment precautions: Seal off the area, close the source of the leak, if possible. Ventilate and suck the air off. Do not allow to enter drains/surface water/ground-water.

Methods for cleaning up: Collect spillage, remove residue using an absorbent. Clean with soapy water. Take up mechanically, placing in appropriate containers for disposal.

Additional information:

7.) Handling and storage

Handling

Advice on safe handling: Do not breath gas/fume/vapour/spray. Avoid contact with skin and eyes.

Protections against fire and explosion: In the event of fire, containers should be cooled with water. The product is not explosive hazardous.

Storage

Requirements for storage rooms and vessels: Store containers in a cool, dry and ventilated area. Containers must be tightly closed. Keep them off flames and away from sources of heat.

Hints on storage assembly: Do not store together with acids, oxydisers and alkylating agents.

Further information on storage conditions: Keep away from food, drink and animal feeding-stuffs.

Storage class: 8; caustic substances (directive for storage together with VCI chemicals)

Material Safety Date Sheet
 according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 4 of 12

8.) Exposure controls and personal protection

Additional information for technical equipment: Ensure adequate ventilation by local air
 Extraction or by a general exhaust system.

Components, workplace-related limiting values which must be monitored:

CAS-no.	Substance name	Type	Value	Remark	Unit
4246-51-9	4,7,10-Trioxa-1,13-tridecandiandiamine		no exposure limit value		

Additional information: The substance is not quoted in the list of limit values TRGS 90.
 However, in view of its properties, concentration at the workplace should be minimised. Aerosol formation should be avoided.

Personal protection equipment:

General protective and hygienic measures: Wash before breaks and after finishing work.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection: Wear PVC gloves. .

Eye protection: Wear face protection and tightly fitting goggles.

Protective clothing: Wear protective clothing. An emergency shower should be available.

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 5 of 12

9.) Physical and chemical properties

Form: liquid
Odour: like amine
Colour: clear to amber

Change of condition	Values	Unit	Method (67/548)
<i>Type (1) Melting point/melting range:</i>	not determined		
<i>Type (2) Boiling point/boiling range:</i>	not determined		
<i>Flash point:</i>	139	°C	
<i>Flammability (solid, gaseous):</i>		°C	
<i>Ignition temperature:</i>	not determined		
<i>Autoflammability:</i>	the product is not auto flammable		
<i>Explosive properties:</i>	the product is not explosive		
<i>Explosion limits:</i> UEG OEG	not determined		
<i>Vapour pressure at (T1)</i>	< 0,001	hPa	(20 °C)
<i>Density at (T1)</i>	1.01	g/cm ³	(20 °C)
<i>Solubility:</i> soluble in water	not determined		
<i>ph-value:</i>	not determined		
<i>Distribution coefficient n-C₈H₁₇OH/H₂O comp.:</i>	not determined		
<i>Viscosity dynamic:</i>	not determined		
<i>Solvent separation test:</i>	no measurable separating layer		
<i>Solvent content:</i>	> 90 %		
<i>Other information:</i>	no information		

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 6 of 12

10.) Stability and reactivity

Conditions to avoid: Heat, sources of ignition

Materials to avoid: Oxidisers, acids and alkali metals

Hazardous decomposition products: Carbon monoxide, carbon dioxide, nitrogen oxides and other organic decomposition products.

Additional information: When the product is used as intended, hazardous decomposition products or undesirable reactions (polymerisation) will not occur. Make sure that the product is handled and stored in an appropriate manner.

Material Safety Data Sheet
 according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener) Page 7 of 12

11.) Toxicological information

Acute toxicity

Type	Values	Species	Method
oral	3160 mg/kg	rat	LD 50
dermal	2500 mg/kg	rabbit	LD 50

Specific symptoms in animal studies: no data available

Primary cauterising/ caustic effect: Causes burns to eyes, skin and respiratory tract.

Sensitising effect: Respiratory tract is affected!

Other information (concerning experimental toxicology): no indication.

Sabacute to chronic toxicity

Investigation:

Species	max. dose	mg/kg	Method
---------	-----------	-------	--------

Result: no data available

Experience with human: When in contact with eyes, the product causes damage to the cornea and burns. Permanent opacity or blindness may result. On the skin, the product may cause severe burns and blisters. Vapours or aerosols inhaled may cauterise the respiratory tract and cause nausea and headaches. Furthermore, symptoms such as tightness of the chest, asthma-like symptoms and difficulties in breathing may occur. The product is detrimental to health when swallowed and may cause burns in the mouth and in the gastro-intestinal tract. The product may aggravate existing cauterised areas of skin, eyes and respiratory tract.

Additional toxicological information (especially for preparation): no indication

Material Safety Data Sheet
 according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 8 of 12

12.) Ecological information:

Information about elimination (persistence and degradation)

Method: no indication

Analyses:

Degree of elimination: no indication

Classification:

Evaluation text: no indication

Other information: none

Behaviour in environment compartments

Component: no indication

Mobility and biological accumulation potential: no indication

Other information: no indication

Ecotoxic effects

Aquatic toxicity:

<u>Kind of test</u>	<u>Effective concentration</u>	<u>Method</u>	<u>Evaluation</u>
---------------------	--------------------------------	---------------	-------------------

Remark: no indication

Behaviour in sewage treatment plants:

<u>Kind of test</u>	<u>Effective concentration</u>	<u>Method</u>	<u>Evaluation</u>
---------------------	--------------------------------	---------------	-------------------

Remark: no indication

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 9 of 12

Other information:

Other ecological information

CSB value: mg/g *Remark:* no indication

BSB₅ value: mg/g *Remark:* no indication

AOX information: *Remark:* no indication

Contains the following heavy metals and bonds as per EC Directive no. 76/464/EEC, as provided for in the recipe: none

General information: Prevent the liquid from entering rivers and lakes, sewage systems or soil. Hazard to drinking water. The product is incompatible with water.

13.) Disposal considerations

Product:

Recommendation: Dispose of waste according to applicable with local regulations. Do not dispose of it together with household waste. Waste requires monitoring, in accordance with § 41 of the law on recirculation of materials and waste (Kreislaufwirtschafts-/ Abfallgesetz)

Classification according to Directive 75/442/EEC: *EWC code:* **070104** *EW designation:* Other organic solvents

Packaging: Cured material can be disposed into normal household waste in accordance with local legal regulations (EWG-code: 200301)

Uncleaned packages

Recommendation: Handle contaminated packaging in the same way as the substance itself. Cleaned packages may be reused / recycled.

Recommended cleaning agents: no indication

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 10 of 12

14.) Transport regulations

Land transport ADR/RID (road-rail)

Class as per ADR/RID-GGVS/E: 8
 Packaging group: II
 Hazard no.: 8
 UN no.: 2735
 Designation of goods: 2735 polyamine, liquid, caustic, n.o.s., (4,7,10-Trioxa-1,13-tridecandiamin), 8, VG II
 Remarks: hazard label no.8, special provisions 274, LQ 19

Inland waterway craft ADN/ADNR

Class as per ADN/R: 8
 Packaging group: II
 Category:
 Designation of goods: 2735 polyamine, liquid, caustic, n.o.s., (4,8,20-Trioxa-1,13-tridecandiamin), 8, VG II
 Remarks: hazard label no. 8, special provisions 274, LQ 19

Marine transport IMDG

Class as per IMDG/GGV Sea: 8
 UN no. : 2735
 PG : II
 EMS no. : 8-05
 MFAG: 320
 Marine pollutant: yes
 Correct technical designation: Polyamines, liquid, corrosive, n.o.s., 4,7,10-Trioxa-113-tridecanediamine
 Remark: Loading category A; IMDG code page 8103

Air transport ICAO-TI and IATA-DGR

Class as per C ICAO/IATA: 8
 UN/ID no.: 2735
 PG: II
 Correct shipping designation: Polyamines, liquid, corrosive, n.o.s. (4,7,10-Trioxa-1,13-tridecanediamine)
 Remark: CAO 818, PAX 820

Transport / additional information: none

Material Safety Data Sheet
 according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 11 of 12

15.) Regulatory information

Marking in accordance with the EEC regulations / guideline (GefStoffV)

Hazards symbol and hazard statement of dangerous substances and preparations:

C (caustic)

Hazardous component(s) for labelling: 4,7,10-Trioxa-1, 13-tridecandiamine

R-phrases: 34 Causes burns

S-phrases: 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately.

Special marking of specific recipes: none

National regulations

Additional classification according to GefStoffV appendix II no: none
 (only applicable in case of deviation from the EC classification)

Information on restrictions imposed on occupation: see § 8 - 10 GefStoffV

Störfallverordnung: no indication
 (accident regulation)

Classification to VbF : N/A

Protection against emission (TA-Luft): no indication

Water hazard class(WGK) : 2 (hazardous to water, self-assessment)

Other prescriptions, restrictions and bans;
 VBG 1; ZH 1/24.2, 132; TRGS 440,555; WHG; VwVwS
 TRGS 200, Classification of materials, recipes and products
 TRGS 220; Safety specification sheet for hazardous materials and recipes
 TRGS 900; Limit values in the atmosphere at the workplace 'Air limit values'
 Prescription on hazardous goods
 Law on recirculation of materials and waste (Kreislaufwirtschafts-/ Abfallgesetz)

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (Liquid Epoxy Hardener)

Page 12 of 12

16.) Other

The information contained in this safety specification sheet reflects our present technical knowledge and satisfies legal requirements at national and EC level. The users' working conditions, however, are not known to us and are beyond our control. Users are responsible for observing all applicable legal provisions. The information contained in this specification sheet describes the safety requirements applicable to our product and implies no guarantee of the properties of the product.

Revision: 2007-01-09
09

Printed: 2007-01-

Material Safety Data Sheet
according to 91/155/EEC

1.) Substance / preparation and company name

Product details

Trade name: WLK (liquid epoxy resin)

Supplier: Fischer Elektronik GmbH & Co. KG
Nottebohmstr. 28 • 58511 Lüdenscheid
Phone: + 49 (0) 2351/435-0 / Fax. + 49 (0) 2351/45754

Department responsible for information: Technical Service

Emergency Service: National Information Centre, Berlin Emergency call: **+ 49 (0)30 19240**

2.) Composition / Information on ingredients

Chemical characterization (substance)

Description: modified epoxy resin

Hazardous ingredients:

CAS-No.	Designation to EC directive	Content	Unit	Hazard Symbol	R-phrases
2426-08-6	1-butoxy-2,3-epoxy propane	< 12,0	Weight %	Xn	10-20/22-37 40-43-52/53-68
25068-38-6	bisphenol-A- epichlor- hydrine resin (MW < 700)	< 65	Weight %	Xi, N	36/37/38-43 51/53

Additional Information: 1-butoxy-2,3-epoxy propane (EINECS 219-376-4, INDEX 603-039-00-7, RTECS TX 4200000, BRN 103668), bisphenol-A-epichlorhydrine resin MW < 700 (INDEX 603-074-00-8)

3.) Hazards identification

Definition of hazard: irritation, sensitising, hazardous to the environment

Special information on the danger for human and environment:

Limited evidence of a carcinogenic effect may cause sensitisation by skin contact. Toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Irritating to eyes, respiratory system and skin. Harmful by inhalation and if swallowed.

Material Safety Data Sheet
 according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 2 of 12

4.) First aid measures

- General information:* Remove contaminated, saturated clothing immediately.
- After inhaling:* Breath fresh air, respiration if necessary. Seek medical assistance immediately.
- In case of skin contact:* Subsequently wash off with water and soap. Seek medical advice if cauterisation continues.
- In case of eye contact:* After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
- In case of ingestion:* The patient should drink plenty of water, if conscious. Get medical assistance immediately. Do not initiate vomiting!
- Information to physician:* Symptomatic treatment, see also safety specification sheet.

5.) Fire fighting measures

Suitable extinguishing media: Carbon dioxide, extinguishing powder, foam (resistant to alcohol), water spray jet.

Extinguishing media which may not be used for safety reasons: Full water jet

Special exposure hazards arising from the substance of preparation itself, combustion products, resulting gases:

Carbon monoxide (CO), carbon dioxide (CO₂) and poisonous halogen pyrolysis products (smoke). In case of fire, closed containers may burst. Cool with water.

Special protective equipment: Chemical-resistant protective clothing including a breathing mask with it's own air supply.

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 3 of 12

6.) Accidental release measures

<i>Personal precautions:</i>	Wear personal protection equipment. Provide adequate ventilation. Avoid skin contact with leaking liquid.
<i>Environment precautions:</i>	Do not allow to enter drains/ surface water/ ground water
<i>Methods for cleaning up:</i>	Collect spillage, remove residue using an absorbent. Clean with soapy water. Take up mechanically, placing in appropriate containers for disposal.
<i>Additional information:</i>	In the event of fire, containers should be cooled. If large quantities are spilt, evacuate the area and fight the fire from a safe distance. Do not inhale vapours.

7.) Handling and storage

Handling

<i>Advice on safe handling:</i>	Avoid contact with skin and eyes. Do not breathe vapour
<i>Protections against fire and explosion:</i>	The composition is combustible. Keep it off open fires and away from sources of ignition,

Storage

<i>Requirements for storage rooms and vessels:</i>	Store containers in a cool, dry and ventilated area. Containers must be tightly closed. Keep them off flames and away from sources of heat. Observe storage instructions in accordance with WHG (water resources law).
<i>Hints on storage assembly:</i>	Do not store together with combustible materials, acids and bases. Keep away from food, drink and animal feeding stuffs.

Material Safety Date Sheet
according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 4 of 12

Further instructions on storage conditions:

Store containers in a dry and dark area.
The recommended storage temperature is between 5 °C and 25 °C. Avoid sources of ignition.

8.) Exposure controls and personal protection

Additional information for technical equipment:

Ensure adequate ventilation by local air Extraction or by a general exhaust system.

Components, workplace-related limiting values which must be monitored:

CAS-no.	Substance name	Type	Value	Remark	Unit
2426-08-6	1-butoxy-2,3-epoxypropane			H; (51)	
25068-38-6	bisphenol-A-epichlorhydrine resin			no exposure limit value	

Additional information: H = skin-absorption; (51): When handling this material, an analysis for the area of work must be prepared, taking the specified concentration value (no limit value in the sense of the prescription for hazardous goods) as a guideline for preparation according to TRGS 402.

Personal protection equipment:

General protective and hygienic measures: Wash before breaks and after finishing work. Use skin protection. Always wear clean working clothes. Do not eat, drink or smoke while working.

Respiratory protection: Recommended if ventilation is poor.

Hand protection: Wear chemical-resistant latex gloves.

Eye protection: Wear tightly fitting goggles. An eye rose should be available.

Protective clothing: Wear protective clothing. An emergency shower should be available.

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 5 of 12

9.) Physical and chemical properties

Form: liquid, viscous
Odour: mild, aromatic
Colour: blue

Change of condition	Values	Unit	Method (67/548)
<i>Type (1) Melting point/melting range:</i>	not available		
<i>Type (2) Boiling point/boiling range:</i>	not available		
<i>Flash point:</i>	> 100	°C	(based on the flash points of the single components)
<i>Flammability (solid, gaseous):</i>			
<i>Ignition temperature:</i>	not determined		
<i>Autoflammability:</i>	The product is not autoflammable		
<i>Explosive properties:</i>	The product is not explosive		
<i>Explosion limits:</i> UEG OEG			
<i>Vapour pressure at (T1)</i>	T = 20 °C	<1	hPa
<i>Density at (T1)</i>	T = 20 °C	>2	g/cm ³
<i>Solubility:</i> in water in organic solvent	insoluble soluble		
<i>ph-value:</i>	T = 20 °C		
<i>Partition coefficient n-C₈H₁₇OH/H₂O comp.:</i>	not determined		log p o/w
<i>Viscosity :</i>	not determined		
<i>Solvent separation test:</i>	no information		
<i>Solvent content:</i>	no information		
<i>Other Information:</i>	no information		

Material Safety Data Sheet

according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 6 of 12

10.) Stability and reactivity

Conditions to avoid: Heat, light, humidity

Materials to avoid: Oxidisers, acids and bases. Polymerisation may be caused by amines, anhydrides, mercaptans and imidazoles

Hazardous decomposition products: Carbon monoxide, carbon dioxide, aldehydes and other organic decomposition products.

Additional information: When the product is used as intended, hazardous decomposition products or undesirable reactions (polymerisation) will not occur. Make sure that the product is handled and stored in an appropriate manner.

Material Safety Data Sheet
 according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 7 of 12

11.) Toxicological information

Acute toxicity

Type	Values	Species	Method
oral	11.400 mg/kg	rat	LD 50
dermal	2.260 mg/kg	rat	LD 50

Specific symptoms in animal studies: no data available

Primary cauterising effect: Cauterising if in contact with eyes, skin and respiratory tract

Sensitising effect: Sensitising possible through skin contact

Other information (concerning experimental toxicology): 1- butoxy-2,3-epoxy propane is considered as a modifier of genetic make-up, classified acc. to category 2 (M2). See also TRGS 905.

Sabacute to chronic toxicity

Investigation:

Species	max. dose	mg/kg	Method
---------	-----------	-------	--------

Result:

Experience with human: The product is detrimental to health when swallowed. Vapours of the product may cauterise the respiratory tract and cause nausea and headaches. The product cauterises the eyes and may cause blurred sight, stinging and tears. The product cauterises the skin. Long or repeated exposure to the liquid will lead to drying out of the skin and may even cause skin irritation. The product sensitises the skin and causes allergic reactions on extremities with symptoms such as rash, itching and swelling. The product may aggravate existing cauterised areas of skin and eyes.

Additional toxicological information (especially for preparation): 1-butoxy-2,3-epoxy propane: Category 3 (EC): There is well-founded concern about the possible carcinogenic effects on human beings.

Material Safety Data Sheet
 according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 8 of 12

12.) Ecological information:

Information about elimination (persistence and degradation)

Method:

Analyses:

Degree of elimination:

Classification:

Evaluation text:

Other information: none

Behaviour in environment compartments

Component:

Mobility and biological accumulation potential:

Other information: none

Ecotoxic effects

Aquatic toxicity:

<u>Kind of test</u>	<u>Effective concentration</u>	<u>Method</u>	<u>Evaluation</u>
---------------------	--------------------------------	---------------	-------------------

Remark: no indication

Behaviour in sewage treatment plants:

<u>Kind of test</u>	<u>Effective concentration</u>	<u>Method</u>	<u>Evaluation</u>
---------------------	--------------------------------	---------------	-------------------

Remark: no indication

<i>respiration inh., commun. Activated sludge</i>	<i>EC 20 = mg/l</i>	<i>acc. to ISO 8192 B</i>
---	---------------------	---------------------------

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 9 of 12

Other information:

Other ecological information

CSB value: mg/g *Remark:* no indication

BSB₅ value: mg/g *Remark:* no indication

AOX value: The product contains organically bound halogen which contribute to the AOX value

Contains the following heavy metals and bonds as per EC Directive no. 76/464/EEC, as provided for in the recipe: no indication

General information: Prevent the liquid from entering rivers and lakes, sewage systems or soil. Hazard to drinking water. The product is incompatible with water.

13.) Disposal considerations

Product:

Recommendation: Dispose of waste according to applicable local regulations. Do not dispose of it together with household waste. Waste requires monitoring, in accordance with § 41 of the law on recirculation of materials and waste (Kreislaufwirtschafts- und Abfallgesetz)

Classification according to 75/442/EWG:

<i>EWC-Code</i>	<i>EWC-designation</i>
080402	Old adhesives and sealing compounds not containing halogenated solvents.

Packaging Recommendations Handle contaminated packaging in the same way as the substance itself. Cleaned packages may be reused / recycled.

Recommended cleaning agents: no indication

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 10 of 12

14.) Transport regulations

Land transport ADR/RID

Class as per ADR/RID

Number/letter:

Warning sign:

Hazard no.

Material no.

Designation of goods:

Remark: No dangerous good in sense of this transport regulations.

Inland waterway craft ADN/ADNR

Class as per ADN/R

Number/letter

Category:

Designation of goods:

Remark: No dangerous good in sense of this transport regulations.

Marine transport IMDG

Class as per IMDG/GGV Sea:

UN no. :

PG :

EMS no. :

MFAG:

Marine pollutant:

Correct technical designation:

Remark: No dangerous good in sense of this transport regulations.

Air transport ICAO-TI and IATA-DGR

Class as per C ICAO/IATA:

UN/ID no.:

PG:

Correct technical designation:

Remark: No dangerous good in sense of this transport regulations.

Transport/additional information: None

Material Safety Data Sheet
 according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 11 of 12

15.) Regulatory information

Marking in accordance with the EEC regulations

Hazards symbols and hazards statements of dangerous substances and preparations

Xn harmful
 N hazardous to the environment

Hazardous component(s) for labelling: 1-butoxy-2, 3-epoxy propane

<i>R-phrases:</i>	36/38 40 43 51/53	Irritating to eyes and skin. Limited evidence of a carcinogenic effect. May cause sensitisation by skin contact Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<i>S-phrases</i>	24/25 28 36/37/39 61	Avoid contact with skin and eyes. After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing, gloves and eye/face protection. Avoid release to the environment. Refer to special instructions / safety data sheet.

Special marking of specific recipes:

Label marking in accordance with appendix III no. 8 GefStoffV:
 'Contains epoxy-based bonds, observe manufacturer's instructions'

National regulations

Additional classification according to GefStoffV appendix II no: none
 (only applicable in case of deviation from the EC classification)

Information on restrictions imposed on occupation: see § 8 - 10 GefStoffV

Störfallverordnung: Annex I , No. 6

Classification to VbF : A III

Protection against emission (TA-Luft): massflow 0,15 g/h, mass per unit volume 0,05 mg/m³

Water hazard class : 2, hazardous to waters, (classification according VwVwS, Annex 3/4)

Material Safety Data Sheet
according to 91/155/EWG

Trade name: WLK (liquid epoxy resin)

Page 12 of 12

Other prescriptions, restrictions and bans:

VBG 1; ZH 1/24.2, 301, 706, 708 of BG; TRGS 150, 540, 555, VwVwS

TRGS 200, Classification of materials, recipes and products;

TRGS 220, Safety specification sheet for hazardous materials and recipes

TRGS 900, Limit values in the atmosphere at the workplace 'Air limit values';

Law on recirculation of materials and waste (Kreislaufwirtschafts- / Abfallgesetz)

16.) Other

The information contained in this safety specification sheet reflects our present technical knowledge and satisfies legal requirements at national and EC level. The users' working conditions, however, are not known to us and are beyond our control. Users are responsible for observing all applicable legal provisions. The information contained in this specification sheet describes the safety requirements applicable to our product and implies no guarantee of the properties of the product.

Revision: 2006-12-15

Date of printing: 15.12.2006