Safety Data Sheet
acc. to OSHA HCS

Printing date 12/02/2016 Rev. 4 Reviewed on 11/10/2016

*
1 Identification

· **Product identifier**
· **Trade name: EPOXYSTUK X 90 (comp A)**
· **Application of the substance / the mixture** Epoxy mortar

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
LITOKOL S.p.A.
13/1 G.Falcone Street
42048 Rubiera (RE)- Italy
Tel. +39 0522 626391 - Fax. +39 0522 620150

· **Information department:** LITOKOL S.p.A. - Email: laboratorio@litokol.it

· **Emergency telephone number:**

LITOKOL S.p.A.
Technical support: Tel. +39 0522 622852 (Monday - Friday: 8.30 -12.30 AM , 2.00 - 6.00 PM)

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2 Hazard(s) identification

· **Classification of the substance or mixture**
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol
oxirane, mono[(C12-14-alkyloxy)methyl] derivs
· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Take off contaminated clothing.
Wash contaminated clothing before reuse.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 1
Fire = 0
Reactivity = 0

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· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
CAS: 25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	5-10%
CAS: 13463-67-7	titanium dioxide	5-10%
CAS: 9003-36-5	formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	2.5-5%
CAS: 68609-97-2	oxirane, mono[(C12-14-alkyloxy)methyl] derivs	1-2.5%
CAS: 38640-62-9	bis(isopropyl)naphthalene	1-2.5%
CAS: 8001-78-3	Castor oil, hydrogenated	1-2.5%

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4 First-aid measures

· **Description of first aid measures**
· **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:**
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
CAS: 25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	90 mg/m3
CAS: 13463-67-7	titanium dioxide	30 mg/m3
CAS: 38640-62-9	bis(isopropyl)naphthalene	5.6 mg/m3
CAS: 14808-60-7	Quartz (SiO_2)	0.075 mg/m3

· **PAC-2:**		
CAS: 25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	990 mg/m3
CAS: 13463-67-7	titanium dioxide	330 mg/m3
CAS: 38640-62-9	bis(isopropyl)naphthalene	61 mg/m3
CAS: 14808-60-7	Quartz (SiO_2)	33 mg/m3

· **PAC-3:**		
CAS: 25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	5,900 mg/m3
CAS: 13463-67-7	titanium dioxide	2,000 mg/m3
CAS: 38640-62-9	bis(isopropyl)naphthalene	370 mg/m3
CAS: 14808-60-7	Quartz (SiO_2)	200 mg/m3

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7 Handling and storage

· **Handling:**

· **Precautions for safe handling**
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.

· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

CAS: 13463-67-7 titanium dioxide	
PEL	Long-term value: 15* mg/m³ *total dust
REL	See Pocket Guide App. A
TLV	Long-term value: 10 mg/m³ withdrawn from NIC

· **Regulatory information**
PEL: Permissible Exposure Limits (OSHA)
REL: Recommended Exposure Limits (NIOSH)
TLV: Threshold Limit Values (ACGIH)
· **Additional information:** The lists that were valid during the creation were used as basis.

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· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Do not eat or drink while working.
Keep away from tobacco products.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not necessary if room is well-ventilated.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
Rubber gloves
Neoprene gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Light weight protective clothing

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
· **Form:**	Pasty
· **Color:**	White
· **Odor:**	Odorless
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
· **Melting point/Melting range:**	Undetermined.
· **Boiling point/Boiling range:**	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Vapor pressure:**	Not determined.
· **Density at 20 °C (68 °F):**	> 1 g/cm³ (> 8.345 lbs/gal)

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· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
· **Water:**	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
· **Dynamic:**	Not determined.
· **Kinematic:**	Not determined.
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Possibility of hazardous reactions** Reacts with strong acids and oxidizing agents.

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:** No further relevant information available.

· **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
CAS: 25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)		
Oral	LD50	>2000 mg/kg (mouse)
		30000 mg/kg (rat)
Dermal	LD50	>1200 mg/kg (rat)
		>2000 mg/kg (rabbit)
CAS: 13463-67-7 titanium dioxide		
Oral	LD50	>20000 mg/kg (rat)
Dermal	LD50	>10000 mg/kg (rabbit)
Inhalative	LC50 / 4h	>6.82 mg/l (rat)
CAS: 38640-62-9 bis(isopropyl)naphthalene		
Oral	LD50	>4000 mg/kg (rat)
Dermal	LD50	>4000 mg/kg (rat)
Inhalative	LC50 / 4h	> 5.6 mg/l (rat) (OECD 403)
CAS: 8001-78-3 Castor oil, hydrogenated		
Oral	LD50	2000 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:** Sensitization possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
CAS: 13463-67-7	titanium dioxide	2B
CAS: 14808-60-7	Quartz (SiO_2)	1

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· **NTP (National Toxicology Program)**		
CAS: 14808-60-7	Quartz (SiO_2)	K

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	
EC50 / 48h	1.8 mg/l (daphnia)
LC50 / 96h	2.0 mg/l (fish)
EC50 / 96h	220 mg/l (algae)
CAS: 13463-67-7 titanium dioxide	
EC50 / 48h	>1000 mg/l (daphnia)
LC50 / 96h	>1000 mg/l (fish)
EC50 / 96h	20 mg/l (algae)
LC50 / 48h	20000 mg/l (daphnia)
CAS: 9003-36-5 formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	
EC50 / 48h	1.6 mg/l
LC50 / 96h	0.55 mg/l (fish)
EC50 / 72h	1.8 mg/l (algae)
NOEC / 21d	0.3 mg/l
LC50 / 48h	0.73 mg/l (fish)
CAS: 38640-62-9 bis(isopropyl)naphthalene	
EC50 / 48h	0.16 mg/l (daphnia)
LC50 / 96h	0.5 mg/l (fish)
EC50 / 72h	0.15 mg/l (algae)
NOEC / 21d	0.013 mg/l (daphnia)
CAS: 8001-78-3 Castor oil, hydrogenated	
NOEC / 21d	0.01 mg/l (daphnia)

· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil**	
CAS: 9003-36-5 formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	
Koc	4460
log Koc	3.65
CAS: 38640-62-9 bis(isopropyl)naphthalene	
log Koc	>4.5
CAS: 8001-78-3 Castor oil, hydrogenated	
log Koc	14.04

· **Ecotoxical effects:**
· **Remark:** Harmful to fish
· **Additional ecological information:**
· **General notes:**
Harmful to aquatic organisms
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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Trade name: EPOXYSTUK X 90 (comp A)

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· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Disposal must be made according to official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, ADN, IMDG, IATA**	Void
· **UN proper shipping name**	
· **DOT, ADR, ADN, IMDG, IATA**	Void
· **Transport hazard class(es)**	
· **DOT, ADR, ADN, IMDG, IATA**	
· **Class**	Void
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	Void
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	Void

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15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 13463-67-7	titanium dioxide
CAS: 14808-60-7	Quartz (SiO_2)

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

CAS: 13463-67-7	titanium dioxide	A4

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Trade name: EPOXYSTUK X 90 (comp A)

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CAS: 14808-60-7	Quartz (SiO_2)	A2

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

CAS: 13463-67-7	titanium dioxide
CAS: 14808-60-7	Quartz (SiO_2)

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol
oxirane, mono[(C12-14-alkyloxy)methyl] derivs
· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Take off contaminated clothing.
Wash contaminated clothing before reuse.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:** LITOKOL S.p.A.
· **Date of preparation / last revision** 12/02/2016 / 3
· **Abbreviations and acronyms:**
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Classification, Labelling and Packaging
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
· *** Data compared to the previous version altered.**

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*
1 Identification

· **Product identifier**
· **Trade name: EPOXYSTUK X 90 (COMP B)**
· **Application of the substance / the mixture** Hardener

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
LITOKOL S.p.A.
13/1 G.Falcone Street
42048 Rubiera (RE)- Italy
Tel. +39 0522 626391 - Fax. +39 0522 620150

· **Information department:** LITOKOL S.p.A. - Email: laboratorio@litokol.it

· **Emergency telephone number:**

LITOKOL S.p.A.
Technical support: Tel. +39 0522 622852 (Monday - Friday: 8.30 -12.30 AM , 2.00 - 6.00 PM)

*
2 Hazard(s) identification

· **Classification of the substance or mixture**
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
3,6,9-triazaundecamethylenediamine
· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· **Precautionary statements**
Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation or rash occurs: Get medical advice/attention.
IF ON SKIN: Wash with plenty of water.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 1
Fire = 1
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.

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US

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Trade name: EPOXYSTUK X 90 (COMP B)

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· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture: consisting of the following components.

· **Dangerous components:**		
CAS: 68951-85-9	Fatty acids, tall-oil, polymers with bisphenol A, diethylenetriamine, epichlorohydrin and tetraethylenepentamine	58-62%
CAS: 26950-63-0	triethylenetetramine, propoxylated	1-1.5%
CAS: 112-57-2	3,6,9-triazaundecamethylenediamine	1-1.5%

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **Special hazards arising from the substance or mixture** No further relevant information available.

· **Advice for firefighters**
· **Protective equipment:**
Mouth respiratory protective device.
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**
Pick up mechanically.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
CAS: 112-57-2	3,6,9-triazaundecamethylenediamine	15 mg/m3

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· **PAC-2:**		
CAS: 112-57-2	3,6,9-triazaundecamethylenediamine	130 mg/m3

· **PAC-3:**		
CAS: 112-57-2	3,6,9-triazaundecamethylenediamine	790 mg/m3

7 Handling and storage

· **Handling:**

· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Store only in the original receptacle.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Store receptacle in a well ventilated area.
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.

· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

CAS: 112-57-2 3,6,9-triazaundecamethylenediamine	
WEEL	Long-term value: 5 mg/m³ Skin; DSEN

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Do not eat, drink, smoke or sniff while working.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
Use suitable respiratory protective device in case of insufficient ventilation.
Short term filter device:
Filter B
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Light weight protective clothing

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
· **Form:**	Fluid
· **Color:**	Amber colored
· **Odor:**	Like ammoniac
· **Odor threshold:**	Not determined.
· **pH-value:**	Not applicable.
· **Change in condition**	
· **Melting point/Melting range:**	Undetermined.
· **Boiling point/Boiling range:**	200 °C (392 °F)
· **Flash point:**	130 °C (266 °F)
· **Flammability (solid, gaseous):**	Not determined.
· **Ignition temperature:**	
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Vapor pressure:**	Not applicable.
· **Density at 20 °C (68 °F):**	0.98 g/cm³ (8.178 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not applicable.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with**	
· **Water:**	Not determined.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
· **Dynamic:**	Not applicable.
· **Kinematic:**	Not applicable.
· **Solvent content:**	
· **Solids content:**	100 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Possibility of hazardous reactions** No dangerous reactions known.

· **Conditions to avoid** No further relevant information available.

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· **Incompatible materials:** No further relevant information available.

· **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
CAS: 26950-63-0 triethylenetetramine, propoxylated		
Oral	LD50	4190 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)
CAS: 112-57-2 3,6,9-triazaundecamethylenediamine		
Oral	LD50	2140 mg/kg (rat)
Dermal	LD50	1260 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

· **Toxicity**

· Aquatic toxicity:	
CAS: 112-57-2 3,6,9-triazaundecamethylenediamine	
EC50 / 48h	24.1 mg/l (crustacea - Daphnia magna)
LC50 / 96h	420 mg/l (fish)
EC50 / 72h	2.1 mg/l (algae)

· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Disposal must be made according to official regulations.

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· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, ADN, IMDG, IATA**	Void
· **UN proper shipping name**	
· **DOT, ADR, ADN, IMDG, IATA**	Void
· **Transport hazard class(es)**	
· **DOT, ADR, ADN, IMDG, IATA**	
· **Class**	Void
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	Void
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Not applicable.
· **Danger code (Kemler):**	-
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	Void

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15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
3,6,9-triazaundecamethylenediamine
· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· **Precautionary statements**
Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation or rash occurs: Get medical advice/attention.
IF ON SKIN: Wash with plenty of water.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:** LITOKOL S.p.A.
· **Date of preparation / last revision** 12/02/2016 / 1
· **Abbreviations and acronyms:**
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Classification, Labelling and Packaging
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
· *** Data compared to the previous version altered.**