SAFETY DATA SHEET

According to regulation (EC) No. 1907/2006 (Reach Annex II)

ARIGI UV K3 CYAN INK

Version 1.0 Revision Date: 2014-11-19Print Date: 2014-11-19

ATTENTION: the safety data of this research product are still incomplete!
The information stated is based upon the data relating to the most significant hazardous component(s).
A safety data sheet is not required for this product under Article 31 of REACH. This SDS has been created on a voluntary basis [to pass on relevant information required under Article 32]
The product should be handled with the appropriate care and attention.

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name .....: ARIGI UV K3 CYAN INK
Product numbers .....: TEST INK
REACH Registration No.: Registration numbers of the individual components: see section 3, if applicable.

1.2. Relevant uses

Indentified relevant use :

Sector of use.....: Research laboratorium substance/mixture
Product category.....: Laboratory chemicals

Uses advised against .:

non-professional use

1.3. Details of the supplier of the safety data sheet

Agfa-Gevaert N.V.
Septestraat, 27
B - 2640 Mortsel
Tel.: +32 3 444 55 01
Fax.: +32 3 444 55 03
E-mail: electronic.sds@agfa.com

Authorized author of this safety data sheet : VAN DYCK GEERT

1.4. Emergency telephone number

Emergency telephone number :+32 3 444 3333 (24h/24h)

2. ADDITIONAL INFORMATION

2.1. Classification of substance or mixture

Productdefinition : Mixture;Laboratory chemicals

2.1.1. Regulation(EC) No 1272/2008 (CLP)

(ATP05)

section	:Class	[category]
3.1	:acute toxicity oral	[Cat.4] (H302)
3.2	:skin corrosion or irritation	[Cat.2] (H315)
3.4B	:skin sensitisation	[Cat.1] (H317)
3.3	:eye damage or irritation	[Cat.1] (H318)
3.7	:reproductive toxicity	[Cat.2] (H361)
3.9	:stot repeated exposure	[Cat.1] (H372)
4.1B	:chronic aquatic hazard	[Cat.3] (H412)

2.1.2. 67/548/EEC or 1999/45/EC

symbols.....: Xn-Xi
Risks.....: R22-R36-R43-R41-R62-R63-R48-R52/53-

Full text of each relevant R- and H- phrase is listed in section 16.

2.2. Label elements

```
GHS07..........exclamation mark
GHS05..........corrosion
GHS08..........health hazard
..............Danger
H302...........Harmful if swallowed.
H315...........Causes skin irritation.
H317...........May cause an allergic skin reaction.
H318...........Causes serious eye damage.
H361...........Suspected of damaging fertility or the unborn child .
H372...........Causes damage to organs  through prolonged or repeated exposure.
H412...........Harmful to aquatic life with long lasting effects.
EUH208.........Contains. May produce an allergic reaction.
EUH210.........Safety data sheet available on request.
P201...........Obtain special instructions before use.
P202...........Do not handle until all safety precautions have been read and understood.
P260...........Do not breathe dust/fume/gas/mist/vapours/spray.
P261...........Avoid breathing dust/fume/gas/mist/vapours/spray.
P264...........Wash … thoroughly after handling.
P270...........Do no eat, drink or smoke when using this product.
```

2.3. Other hazards

Additional Information

```
ATTENTION: the safety data of this research product are still incomplete!

The information stated is based upon the data relating to the most significant hazardous
component(s). The product should be handled with the appropriate care and attention.
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3. THE HAZARD AND LABELING INFORMATION IN THIS SECTION IS THAT OF THE INDIVIDUAL INGREDIENTS. THE CORRESPONDING INFORMATION RELATIVE TO THIS PRODUCT AS SUPPLIED IS GIVEN IN SECTION 2.1

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The hazard and labeling information in this section is that of the individual ingredients. The
corresponding information relative to this product as supplied is given in section 2.1
Mixture;Laboratory chemicals

Hazardous components in the meaning of regulation (EC) No 1272/2008 (CLP)
================================================================================
40- 60% : 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
CASRN:0086273-46-3  EC:000000000000     INDEX:              REACHID:[CONFIDENTIAL]
          GHS-pictogram.......: GHS07
          GHS-signalword......: Warning
          GHS-hazard..........: H302 H317
          GHS-classes.........:
          GHS Acute Toxicity (Estimate) Mammalian - LD50/LC50
             oral............................: 0  mg/kg
             dermal..........................: 0  mg/kg
             inhalation......................: 0  mg/l
             gases...........................: 0  ppmV
             mist/dust.......................: 0  mg/l
          GHS Aquatic Toxicity(Estimate) - LC50/EC50/ErC50
             acute...........................: 0  mg/l
             chronic.........................: 0  mg/l
             acute M-factor..................: 0
             chronic M-factor................: 0
```

```
            Water hazard class(WGK).............: 1
            GHS unknown oral toxicity...........: false
            GHS unknown dermal toxicity.........: false
            GHS unknown inhalation toxicity.....: false
            GHS Non-Additivity..................: false
5- 10% : OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
CASRN:0057472-68-1  EC:EINECS260-754-3  INDEX:              REACHID:01-2119484629-21
            GHS-pictogram.......: GHS05 GHS07
            GHS-signalword......: Danger
            GHS-hazard..........: H315 H318 H317
            GHS-classes.........:
            GHS Acute Toxicity (Estimate) Mammalian - LD50/LC50
               oral.............................: 0  mg/kg
               dermal...........................: 0  mg/kg
               inhalation.......................: 0  mg/l
               gases............................: 0  ppmV
               mist/dust........................: 0  mg/l
            GHS Aquatic Toxicity(Estimate) - LC50/EC50/ErC50
               acute............................: 0  mg/l
               chronic..........................: 0  mg/l
               acute M-factor...................: 0
               chronic M-factor.................: 0
            Water hazard class(WGK).............: 2
            GHS unknown oral toxicity...........: false
            GHS unknown dermal toxicity.........: false
            GHS unknown inhalation toxicity.....: false
            GHS Non-Additivity..................: false
10- 20% : ISODECYL ACRYLATE
CASRN:0001330-61-6  EC:EC215-542-5;EINECS215-542-5INDEX:607-133-00-9  REACHID:01-2119964031-47
            GHS-pictogram.......: GHS07 GHS09
            GHS-signalword......: Warning
            GHS-hazard..........: H319 H315 H335 H411
            GHS-classes.........:
            GHS Acute Toxicity (Estimate) Mammalian - LD50/LC50
               oral.............................: 0  mg/kg
               dermal...........................: 0  mg/kg
               inhalation.......................: 0  mg/l
               gases............................: 0  ppmV
               mist/dust........................: 0  mg/l
            GHS Aquatic Toxicity(Estimate) - LC50/EC50/ErC50
               acute............................: 0  mg/l
               chronic..........................: 0  mg/l
               acute M-factor...................: 0
               chronic M-factor.................: 0
            Water hazard class(WGK).............: 2
            GHS unknown oral toxicity...........: false
            GHS unknown dermal toxicity.........: false
            GHS unknown inhalation toxicity.....: false
            GHS Non-Additivity..................: false
10- 20% : 1-VINYLHEXAHYDRO-2H-AZEPIN-2-ONE
CASRN:0002235-00-9  EC:EINECS218-787-6  INDEX:              REACHID:01-2119977109-27
            GHS-pictogram.......: GHS07 GHS08
            GHS-signalword......: Danger
            GHS-hazard..........: H302 H319 H317 H372
            GHS-classes.........:
```

```
            GHS Acute Toxicity (Estimate) Mammalian - LD50/LC50
               oral.........................: 0  mg/kg
               dermal.......................: 0  mg/kg
               inhalation...................: 0  mg/l
               gases........................: 0  ppmV
               mist/dust....................: 0  mg/l
            GHS Aquatic Toxicity(Estimate) - LC50/EC50/ErC50
               acute........................: 0  mg/l
               chronic......................: 0  mg/l
               acute M-factor...............: 0
               chronic M-factor.............: 0
            Water hazard class(WGK).............: 2
            GHS unknown oral toxicity...........: false
            GHS unknown dermal toxicity.........: false
            GHS unknown inhalation toxicity.....: false
            GHS Non-Additivity..................: false
   1- 5% : DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE
   CASRN:0075980-60-8  EC:278-355-8        INDEX:015-203-00-X  REACHID:01-2119972295-29
            GHS-pictogram.......: GHS08
            GHS-signalword......: Warning
            GHS-hazard..........: H361f
            GHS-classes.........:
            GHS Acute Toxicity (Estimate) Mammalian - LD50/LC50
               oral.........................: 0  mg/kg
               dermal.......................: 0  mg/kg
               inhalation...................: 0  mg/l
               gases........................: 0  ppmV
               mist/dust....................: 0  mg/l
            GHS Aquatic Toxicity(Estimate) - LC50/EC50/ErC50
               acute........................: 0  mg/l
               chronic......................: 0  mg/l
               acute M-factor...............: 0
               chronic M-factor.............: 0
            Water hazard class(WGK).............: 2
            GHS unknown oral toxicity...........: false
            GHS unknown dermal toxicity.........: false
            GHS unknown inhalation toxicity.....: false
            GHS Non-Additivity..................: false
   5- 10% : Multifunctional Acrylate

            GHS-pictogram.......: GHS07
            GHS-signalword......: Warning
            GHS-hazard..........: H315 H319 H317
            GHS-classes.........:
            GHS Acute Toxicity (Estimate) Mammalian - LD50/LC50
               oral.........................: 0  mg/kg
               dermal.......................: 0  mg/kg
               inhalation...................: 0  mg/l
               gases........................: 0  ppmV
               mist/dust....................: 0  mg/l
            GHS Aquatic Toxicity(Estimate) - LC50/EC50/ErC50
               acute........................: 0  mg/l
               chronic......................: 0  mg/l
               acute M-factor...............: 0
               chronic M-factor.............: 0
```

```
            Water hazard class(WGK).............: 0
            GHS unknown oral toxicity...........: false
            GHS unknown dermal toxicity.........: false
            GHS unknown inhalation toxicity.....: false
            GHS Non-Additivity..................: false
1- 5% : PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
CASRN:0162881-26-7  EC:423-340-5        INDEX:015-189-00-5  REACHID:01-2119489401-38
            GHS-pictogram.......: GHS07
            GHS-signalword......: Warning
            GHS-hazard..........: H317 H413
            GHS-classes.........:
            GHS Acute Toxicity (Estimate) Mammalian - LD50/LC50
               oral.............................: 0  mg/kg
               dermal...........................: 0  mg/kg
               inhalation.......................: 0  mg/l
               gases............................: 0  ppmV
               mist/dust........................: 0  mg/l
            GHS Aquatic Toxicity(Estimate) - LC50/EC50/ErC50
               acute............................: 0  mg/l
               chronic..........................: 0  mg/l
               acute M-factor...................: 0
               chronic M-factor.................: 0
            Water hazard class(WGK).............: 1
            GHS unknown oral toxicity...........: false
            GHS unknown dermal toxicity.........: false
            GHS unknown inhalation toxicity.....: false
            GHS Non-Additivity..................: false

- % : components with unknown toxicity


Hazardous components in the meaning of regulation (EC) No 1272/2008 (CLP)
================================================================================
40-60% : 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
CASRN:0086273-46-3  EC:000000000000
    symbols&Risks   : XN;R22-R43
5-10% : OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
CASRN:0057472-68-1  EC:EINECS260-754-3
    symbols&Risks   : XI;R38-R41-R43
10-20% : ISODECYL ACRYLATE
CASRN:0001330-61-6  EC:EC215-542-5;EINECS215-542-5INDEX:607-133-00-9
    symbols&Risks   : N-XI;R36/37/38-R51/53
10-20% : 1-VINYLHEXAHYDRO-2H-AZEPIN-2-ONE
CASRN:0002235-00-9  EC:EINECS218-787-6
    symbols&Risks   : T;R22-R36-R43-R48/23
1-5% : DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE
CASRN:0075980-60-8  EC:278-355-8        INDEX:015-203-00-X
    symbols&Risks   : XN;R62
5-10% : Multifunctional Acrylate
1-5% : PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
CASRN:0162881-26-7  EC:423-340-5        INDEX:015-189-00-5
    symbols&Risks   : XI;R43-R53
```

4. FOLLOWING EYE CONTACT

4.1. Description of first aid measures

4.1.1. General notes

General Advice .....:

4.1.2. Following inhalation

not available

4.1.3. Following skin contact

not available

4.1.4. Following eye contact

not available

4.1.5. Following ingestion

Rinse mouth. Only induce vomiting at the instruction of medical personnel. Seek medical advice.

4.1.6. Self-protection of the first aider

not available

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

not available

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

Notes for the doctor .....: In case of shortness of breath, give oxygen. Keep victim warm.

5. SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS

5.1. Extinguishing media

Powder, foam, carbon dioxide (CO2)

5.2. Special hazards arising from the substance or mixture

When heated to decomposition, emission of toxic or caustic fumes possible.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Protective clothing.
Keep away from heat or open flame.

5.4. Additional Information

Collect contaminated fire extinguishing water separately.

6. FOR CLEANING UP

6.1. Personal precautions , protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment:	Eye-rinsing bottle with pure water. Close-fitting safety goggles. Wear impermeable gloves.
Emergency procedures:	Mark off the place of the accident for other road users. The product must be treated with the usual care for chemicals. No smoking/no open fire. Consult an expert. See section 14 for available EmS-code (IMDG)

6.1.2. For emergency responders

For emergency responders:	Wear Protective clothing. Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Personal protective equipment:	not available

6.2. Environmental precautions

The relevant environmental information for the substances employed was not available at the time of compilation of this document. Avoid release to the environment. If the product has entered the sewer or a water-course, warn police / fire-brigade.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

Keep away from heat or open flame.

6.3.2. For cleaning up

Moisten spilled product with water and shovel up. Collect the product in another vessel. Carefully collect leftovers. Carry away the product to a safe site.

6.3.3. Other information

If the product has entered the sewer or a water-course, warn police / fire-brigade.

6.4. Reference to other sections

See section 14 for available EmS-code (IMDG).
See section 13 for waste disposal.

6.5. Additional Information

not available

7. HANDLING

7.1. Precautions for safe handling

7.1.1. Protective measures

The product should be handled with the care usual when dealing with chemicals.

7.1.2. Advice on general occupational hygiene

Do no eat, drink or smoke when using this product. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities

No smoking/no open fire. Store in a dry place and well closed.
Keep only in original container.

List of EU- and country-specific regulations for Mixture/Substance
==========
DE TRGS 510 Lagerung von Gefahrstoffen in ortsbeweglichen Behältern (LGK)
Storage hazardclass: LGK6.1D: Non-combustible, acute toxicity, categories 3 / toxic or hazardous substances with chronic effects

7.3. Specific end uses

Use as laboratory reagent

8. BODY PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

List of occupational exposure limits (OEL)
from EC and country specific regulations
==========
not available

8.1.2. Biological limit values

LIST OF BIOLOGICAL LIMIT VALUES (BLV)
==========
not available

8.1.3. Exposure limits at intended use

not available

8.1.4. DNEL/PNEC-values

List of derived no-effect effect limits (DNEL)
==========
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE

```
   DNEL, workers:
      inhalation(systemic)....: 24.48 mg/m3
-----------------------------------------------
-> CASRN0162881-26-7: PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
   DNEL, workers:
      inhalation(systemic)....: 7.8 mg/m3
-----------------------------------------------

List of predicted no effect concentrations (PNEC)
================================================
not available
```

8.1.5. Risk management measures according to used control banding approach

Control banding for chemicals according to the ILO CHEMICAL CONTROL TOOLKIT (ICCT): not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Observe good industrial hygiene practices

8.2.2. Personal protective equipment

Eye / Face protection	Safety glasses or face screen
Skin protection	Wear suitable protective clothing.
Hand protection	Wear appropriate chemical resistant gloves. In case of prolonged immersion or frequently repeated contact use gloves made of the materials: butyl rubber (thickness >= 0.36 mm, breakthrough time > 480 min), nitrile rubber (thickness >= 0.38 mm, breakthrough time > 480 min) or neoprene (thickness >= 0.65 mm, breakthrough time > 240 min). For intermittent splash Protection corresponding gloves with breakthrough times > 60 min can be used. Avoid gloves made of natural latex.
Respiratory protection	Under normal conditions of use, respirator protection not required. If respirators are used, institute a program in accordance with local regulations and standards.
Thermal hazards	Under normal conditions of use, thermal protection not required.

8.2.3. Environmental exposure controls

Effluent regulations/discharge/treatment/contents may vary from one area to another. Please consult the local regulations regarding the disposal of this material. Do not release into drain. Collect for removal by a licensed waste contractor.

8.2.4. Consumer exposure control

not applicable

9. APPEARANCE

9.1. Information on basic physical and chemical properties

9.1.1. Appearance

Appearance	: liquid
Colour	: cyan
Odour	: characteristic
Odour threshold	: not available

9.1.2. Safety relevant basic data

pH (25°C)	: not available

Melting/Freezing point (°C) .....: not available
Boiling point/range (°C) .....: 121 (estimate)
Flash Point (°C) .....: 106 (estimate)
Evaporation rate .....: not available
Flammability (solids, gas) .....: not available
Upper/lower flammability or explosive limits : not available
Vapour Pressure, Pa at °C .....: 23 (estimate)
Relative Density .....: not available
Solubility in water and solvents (mg/l) : not available
Partition coefficient: n-octanol/water : not available
Auto-ignition temperature (°C) .....: not available
Decomposition temperature (°C) .....: not available
Viscosity (at 20°C) .....: not available
Explosive properties .....: not applicable
Oxidising properties .....: not available
Combustibility BZ/R .....: not available
Combustibility BZ/100 .....: not available

9.1.3. Physical hazards
To be annexed to this SDS after REACH registration is completed

9.2. Other information
not available

10. STABILITY AND REACTIVITY

10.1. Reactivity
Non-examined product. Reactivity is not to be expected under normal conditions of temperature and pressure.

10.2. Chemical Stability
Probably stable material. No information is available on the behaviour of the product in the event of rupture of the packaging.

10.3. Possibility of hazardous reactions
Decomposition temperature .....: not available
Decomposition energy .....: not available
Exothermal reaction.....: not available

10.4. Conditions to avoid
Dust explosion class.....: not available
Explosion by shock.....: not available
Explosion by friction.....: not available

10.5. Incompatible materials
Non-examined product, no dangers known.

10.6. Hazardous decomposition products
When heated to decomposition, emission possible of toxic or caustic fumes.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
11.1.1. Acute Toxicity
toxicity of substance/mixture as a whole :
==========
Harmful if swallowed.
Classification procedure: Calculation method.
ATEmix(oral).....: 0 mg/kg

```
ATEmix(dermal).............: 0 mg/kg
ATEmix(inhalation).........: 0 mg/L
ATEmix(gases)..............: 0 ppmV
ATEmix(mist/dust)..........: 0 mg/l

toxicity of individual components in pure state :
================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      LC50(oral).................: 2026 mg/kg (male rat)
      LD50(dermal)...............: >2000 mg/kg (rat)
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      LC50(oral).................: 4600mg/kg (rat)
      LD50(dermal)...............: >2000 mg/kg (rat)
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      no data available
```

11.1.2. Skin corrosion/irritation

```
Skin corrosion/irritation of substance/mixture as a whole :
===========================================================
Causes skin irritation.
Classification procedure: Expert judgement and weight of evidence determination.

Skin corrosion/irritation of individual components in pure state :
==================================================================
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      Causes skin irritation.
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      Causes skin irritation.
: Multifunctional Acrylate
      Causes skin irritation.
```

11.1.3. Serious eye damage/irritation

```
Eye damage/irritation of substance/mixture as a whole :
=======================================================
Causes serious eye damage.
Classification procedure: Expert judgement and weight of evidence determination.

Eye damage/irritation of individual components in pure state :
==============================================================
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      Causes serious eye damage.
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      Causes serious eye irritation.
-> CASRN0002235-00-9: 1-VINYLHEXAHYDRO-2H-AZEPIN-2-ONE
      Causes serious eye irritation.
: Multifunctional Acrylate
      Causes serious eye irritation.
```

11.1.4. Respiratory or skin sensitization

```
Respiratory/skin sensitization of substance/mixture as a whole :
================================================================
May cause an allergic skin reaction.
Classification procedure: Calculation method.

Respiratory/skin sensitization of individual components in pure state :
```

```
=========================================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      May cause an allergic skin reaction.
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      May cause an allergic skin reaction.
-> CASRN0002235-00-9: 1-VINYLHEXAHYDRO-2H-AZEPIN-2-ONE
      May cause an allergic skin reaction.
: Multifunctional Acrylate
      May cause an allergic skin reaction.
-> CASRN0162881-26-7: PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
      May cause an allergic skin reaction.
```

11.1.5. germ cell mutagenicity

```
Mutagenicity of substance/mixture as a whole :
==============================================
Based on available data, the classification criteria are not met.

Mutagenicity of individual components in pure state :
====================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      no data available
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      no data available
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      no data available
-> CASRN0002235-00-9: 1-VINYLHEXAHYDRO-2H-AZEPIN-2-ONE
      no data available
-> CASRN0075980-60-8: DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE
      no data available
: Multifunctional Acrylate
      no data available
-> CASRN0162881-26-7: PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
      no data available
```

11.1.6. carcinogenicity

```
carcinogenicity of substance/mixture as a whole :
=================================================
Based on available data, the classification criteria are not met.

carcinogenicity of individual components in pure state :
========================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      no data available
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      no data available
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      no data available
-> CASRN0002235-00-9: 1-VINYLHEXAHYDRO-2H-AZEPIN-2-ONE
      no data available
-> CASRN0075980-60-8: DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE
      no data available
: Multifunctional Acrylate
      no data available
-> CASRN0162881-26-7: PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
      no data available
```

11.1.7. reproductive toxicity

```
Reproductive toxicity of substance/mixture as a whole :
=======================================================
Suspected of damaging fertility or the unborn child  .

Reproductive toxicity of individual components in pure state :
==============================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      no data available
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      no data available
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      no data available
-> CASRN0002235-00-9: 1-VINYLHEXAHYDRO-2H-AZEPIN-2-ONE
      no data available
-> CASRN0075980-60-8: DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE
Suspected of damaging fertility.
: Multifunctional Acrylate
      no data available
-> CASRN0162881-26-7: PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
      no data available
```

11.1.8. Specific target organ toxicity-single exposure (STOT-SE)

```
STOT-SE of substance/mixture as a whole :
=========================================
Based on available data, the classification criteria are not met.

STOT-SE of individual components in pure state :
================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      no data available
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      no data available
-> CASRN0001330-61-6: ISODECYL ACRYLATE
May cause respiratory irritation.
```

11.1.9. Specific target organ toxicity--repeated exposure (STOT-RE)

```
STOT-RE of substance/mixture as a whole :
=========================================
Causes damage to organs  through prolonged or repeated exposure .

STOT-RE of individual components in pure state :
================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      Repeated dose(oral)..........: 4.6 (brachydanio rerio)
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      no data available
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      no data available
```

11.1.10. Aspiration hazard

```
toxicity of substance/mixture as a whole :
Based on available data, the classification criteria are not met.
Classification procedure: Calculation method.
```

11.1.11. Additional hazards

```
Additional toxicity of individual components in pure state :
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      no data available
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      no data available
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      no data available
```

11.1.12. Information on symptoms and effects

```
Symptoms and effects of individual components in pure state :
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      no data available

-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      no data available

-> CASRN0001330-61-6: ISODECYL ACRYLATE
      General effects.............: Dermatitis, To the best of our knowledge, the
                                    chemical, physical, and toxicological properties have not
                                    been thoroughly investigated.  RTECS: AT2190000
      inhalation..................: May be harmful if inhaled. Causes respiratory tract
                                    irritation.
      ingestion...................: May be harmful if swallowed.
      skin contact................: May be harmful if absorbed through skin. Causes
                                    skin irritation.
      eye contact.................: May cause eye irritation.
   RTECS...................: AT2190000
```

12. AQUATIC TOXICITY

12.1. Toxicity

```
toxicity of individual components in pure state :
================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      LC50(fish)..................: 6.8 mg/L/96h (brachydanio rerio)
      EC50(invertebrates).....: 55 mg/L/24|48h (daphnia)
      NOEC(fish)..................: 2.2 mg/L (brachydanio rerio)
      T-: Norwegian
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      LC50(fish)..................: 4.64 mg/L/96h (leuciscus idus)
      EC50(invertebrates).....: 22.3mg/l/48h (daphnia)
      EC50(algae).................: 6.7mg/l/72h (algae)
      T-: presumumably not toxic for water organisms (EC50>=1);
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      EC50(invertebrates).....: >0.1g/l/daphnia
      T-: potentially toxic for water organisms (EC50<1);
Toxic to aquatic life with long lasting effects.
```

12.2. Persistence and degradability

```
persistence/degradability of substance/mixture as a whole :
===========================================================
```

```
BOD.....................................: not available
COD.....................................: not available
T-1/2(sea water)........................: not available
T-1/2(fresh-water)......................: not available
T-1/2(sea sediment).....................: not available
T-1/2(freshwater sediment)..............: not available
T-1/2(soil).............................: not available
T-1/2(air)..............................: not available
bio-degradation.........................: not available
Evaluation procedure persistence/degradability: Calculation method.
persistence/degradability assessment: not available

persistence/degradability of individual components in pure state :
================================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      Biodegradation(water).....: >80%28d,readily degradable
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      Biodegradation(water).....: 100%28days (OECD301E)
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      P-: not available
```

12.3. Bioaccumulative potential

```
Bioaccumulation of substance/mixture as a whole :
=================================================
Partition coefficient(logPow).....: not available
bioconcentration factor(BCF).....:
Bioaccumulation assessment: B-: no indication for bioaccumulation (logKow<=3)
Evaluation procedure Bioaccumulation: Calculation method.

Bioaccumulation of individual components in pure state :
========================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      logKOW.....................: 1.7
      B-: very low (logKow<3)
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      B-: not available
-> CASRN0001330-61-6: ISODECYL ACRYLATE
      B-: not available
```

12.4. Mobility in soil

```
Mobility in soil of substance/mixture as a whole :
==================================================
Partition coefficient (logKoc).....: not available
Adsorption coefficient.............: not available
Mobility in soil: not available
Evaluation procedure Mobility in soil: Calculation method.

Mobility in soil of individual components in pure state :
========================================================
-> CASRN0086273-46-3: 2-(2-VINYLOXYETHOXY)ETHYL ACRYLATE
      logKoc(soil)................: 1.2
      Mobility(soil): very high mobility (Koc<50)
      Surface tension.............: 33.9 mN/m@20oC
-> CASRN0057472-68-1: OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
      Mobility(soil): not available
```

-> CASRN0001330-61-6: ISODECYL ACRYLATE
Mobility(soil): not available

12.5. Result of PBT and vPvB assessment

PBT.....: no assessment available
vPvB.....: no assessment available

12.6. Other adverse effects

not available

12.7. Additional Information

PROVISIONAL CALCULATED GESAMP Hazard Profile of substance/mixture

NAME....: ARIGI UV K3 CYAN INK
EHS.....: TRN.....:
CAS.....: RTECS...:

A1a	A1b	A1	A1	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
(0)		(0)	(0)		(0)	(1)			(2)	(3)	ST		NI	

GESAMP/EHS profiles of individual components

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=NetRegister Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acute aquatic toxicity LC50/EC50/IC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg) , C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation& corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

13. ADDITIONAL INFORMATION

13.1. Waste treatment methods

Waste should not be disposed of by release to sewers. According to local regulations, the disposal should be made through a licensed chemical waste disposal service. Effluent regulations / discharge/ treatment / contents may vary from one area to another. Please consult the local regulations regarding the disposal of this material.

WASTE CODE:
EWC: 16 03 05

HAZARDOUS PROPERTIES OF WASTE:
H4 'Irritant': non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.
H5 'Harmful': substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.
H6 'Toxic': substances and preparations (including very toxic substances and preparations) which, if they are inhaled or ingested or if they penetrate the skin, may involve serious, acute or chronic health risks and even death.
H13 'Sensitizing': substances and preparations which, if they are inhaled or if they penetrate the skin, are capable of eliciting a reaction of hypersensitization such that on further exposure to the substance or preparation, characteristic adverse effects are produced.
H14 'Ecotoxic': waste which presents or may present immediate or delayed risks for one or more sectors of the environment.

Additional contaminants present as a result of the use of the substance/mixture will need to be taken into account and assigned additional H-codes if applicable.

14. ADDITIONAL INFORMATION

	Land transport (ADR/RID)	Inland waterway transport (ADN)	Sea transport (IMDG)	Air transport (IATA-DGR/ICAO-TI)
14.1. UN-number				
14.2. Proper shipping name	liquid, not dangerous for transport, MIXTURE	liquid, not dangerous for transport, MIXTURE	liquid, not dangerous for transport, MIXTURE	liquid, not dangerous for transport, MIXTURE
14.3. classes	()			
Labelling Number				
14.4. Packing group	-	-	-	-
14.5. Environmental hazard	No	No		No

14.6. Special precautions for user
not available

14.7. Transport in bulk according to Annex II of MARPOL73/78 and IBC code
Transport in bulk not intended for this product.

14.8. Additional Information

14.8.1. Land transport (ADR/RID)
hazardidentification.....: -
transportcategory.....: 1
tunnelcode.....:
Quantity limitation.....: -
Excepted Quantity Code (EQ).....: -

14.8.2. Inland waterway transport (ADN)

14.8.3. Sea transport (IMDG)
EmS.....:
marinepolutant.....:
segregation groups.....:

14.8.4. ICAO/IATA cargo aircraft transport
limited quantity CARGO.....:
packing instructions CARGO.....:

14.8.5. ICAO/IATA passenger and cargo aircraft
limited Quantity PAX.....:
packing instructions PAX.....:

14.8.6. ICAO/IATA Limited Quantity (LQ) passenger aircraft

```
Quantity limitation.............:
Packing Instructions (LQ).......:
```

14.8.7. UN "Model Regulation"

```
UN, liquid, not dangerous for transport, MIXTURE, -
```

15. REGULATORY INFORMATION

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

```
CAUTION: Substance/mixture not yet fully tested
List of EU- and country-specific regulations for components
==========================================================
CASRN:0057472-68-1; EC:EINECS260-754-3; INDEX:
NAME :OXYBIS(METHYL-2,1-ETHANEDIYL) DIACRYLATE
CN IECSC 2013:
   oxybis(methyl-2,1-ethanediyl) diacrylate
----------------------------------------------------
CASRN:0001330-61-6; EC:EC215-542-5;EINECS215-542-5; INDEX:607-133-00-9
NAME :ISODECYL ACRYLATE
EC 60/2000 Water Policy (2009-06-05) - main pollunats:
   {5. PBT/zPzB/CMR}
NL Prioritaire Stoffen-Lijst 2011:
   {6. gelijkwaardige zorgstoffen}
CN IECSC 2013:
   isodecyl acrylate
EC REACH (SVHC): Candidate List Substances of Very High Concern:
   Reason Inclusion: Equivalent level of concern having probable serious effects to human
        health (Article 57 f)
  Inclusion Date:19/12/2012
EC REACH (SVHC): Candidate List Substances of Very High Concern:
   Reason Inclusion: Equivalent level of concern having probable serious effects to human
        health (Article 57 f)
  Inclusion Date:19/12/2012
----------------------------------------------------
CASRN:0002235-00-9; EC:EINECS218-787-6; INDEX:
NAME :1-VINYLHEXAHYDRO-2H-AZEPIN-2-ONE
CN IECSC 2013:
   1-vinylhexahydro-2H-azepin-2-one
----------------------------------------------------
CASRN:0075980-60-8; EC:278-355-8; INDEX:015-203-00-X
NAME :DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE
CN IECSC 2013:
   diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
----------------------------------------------------
CASRN:; EC:; INDEX:
NAME :Multifunctional Acrylate
EC 60/2000 Water Policy (2009-06-05) - main pollunats:
   {5. PBT/zPzB/CMR}
NL Prioritaire Stoffen-Lijst 2011:
   {6. gelijkwaardige zorgstoffen}
EC REACH (SVHC): Candidate List Substances of Very High Concern:
   Reason Inclusion: Equivalent level of concern having probable serious effects to human
        health (Article 57 f)
  Inclusion Date:19/12/2012
EC REACH (SVHC): Candidate List Substances of Very High Concern:
```

```
   Reason Inclusion: Equivalent level of concern having probable serious effects to human
        health (Article 57 f)
  Inclusion Date:19/12/2012
-----------------------------------------------
CASRN:0162881-26-7; EC:423-340-5; INDEX:015-189-00-5
NAME :PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
CN IECSC 2013:
   phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide
-----------------------------------------------

List of EU- and country-specific regulations for Mixture/Substance
================================================================
DE 1999 Verwaltungsvorschrift wassergefährdende Stoffe (VwVwS/WGK)
   Water hazard classWGK: 2 - hazardous for waterWGK2 (calculation)
EC 1999/13 volatile organic compounds (VOC-guideline)
    VOC: 67%
```

15.2. Chemical safety assessment

No chemical safety assessment (CSA) has been carried out for this substance/mixture by the supplier.

16. OTHER INFORMATION

16.1. Indication of changes

```
First Issuing date.......:2014-11-19
Revision Date............:2014-11-19
```

16.2. Abbreviations and acronyms

```
ADN............European Agreement concerning the International Carriage of Dangerous Goods by
                 Inland Waterways
ADR............European Agreement Concerning the International Carriage of Dangerous Goods by
                 Road
BCF............bioconcentration factor
CLP............European Union system of classification, labelling and packaging chemical
                 substances and mixtures.
DNEL...........derived no effect level
EMS............EmS code
GESAMP.........Joint Group of Experts on the Scientific Aspects of Marine Environmental
                 Protection
GHS............GHS
IBC............Intermediate Bulk Container
IDMG...........International Martime Dangerous Goods Code
ICAO...........International Civil Aviation Organization
IATA...........International Air Transport Association
LOAEL..........lowest observed adverse effect level
MARPOL.........International Convention for the Prevention of Pollution From Ships
NOAEL..........No Observed Adverse Effect Level
OPCW...........Organisation for the Prohibition of Chemical Weapons
PNEC...........predicted no effect concentration
REACH..........REACH
RID............International regulations carriage of dangerous goods by
                 rail.TDG............transport of dangerous good
```

16.3. Sources of key data used to compile the datasheet

```
Safety Data Sheet(s) from the supplier(s). Product GHS-classification from regulatory lists:
       regulations EC  EC 1272/2008 (CLP00), EC 790/2009 & 758/2013 (ATP01), EU 286/2011
```

(ATP02), EU 618/2012 (ATP03), EU 487/2013 (ATP04), EU 944/2013 (ATP05) & EU 605/2014 (ATP06).

From Transport classifications : ADR 2013, ADN 2013, RID 2013, IDMG 2004(and amendements), ICAO/IATA, CFR49, TDG. Directive 2008/68/EC

From EC regulations:

EC SVHC Substances of very high concern (2012/12/19)
EC 33/1994 Protection of young people at work
EC 62/1996 Air Quality Framework Directive
EC 24/1998 CHEMICAL AGENTS AT WORK
EC 13/1999 Limitation of emmissions (VOC)
EC 60/2000 Water Policy (2009-06-05)
EC 38/2000 EXPOSURE LIMITS (1stList)
EC 648/2004 Detergent Regulation
EC 111/2005 Drug Precursors
EC 15/2006 EXPOSURE LIMITS (2ndList)
EC 161/2009 EXPOSURE LIMITS (3thList)
EC 37/2004 EXPOSURE CARCINOGENES MUTAGENS
EC 148/2009 EXPOSURE ASBESTOS
EC 111/2005 Drug Precursor Regulation
EC 1223/2009 COSMETICS
EU 10/2011 FOOD Contact Regulations (amended 1282/2011)
EC 1107/2009 Plant Protection Products (PPP)
EC 528/2012 BIOCIDAL PRODUCTS REGULATION
EC 552/2009 SUBSTANCE RESTRICTION LIST
EU 276/2010 SUBSTANCE RESTRICTION (ACRYLAMIDE)
EU 412/2012 SUBSTANCE RESTRICTION (DMF)
EU 835/2012 SUBSTANCE RESTRICTION (CADMIUM)
EU 836/2012 SUBSTANCE RESTRICTION (LEAD)
EU 847/2012 SUBSTANCE RESTRICTION (MERCURY)
EU 848/2012 SUBSTANCE RESTRICTION (PHENYLMERCURY)
EC 649/2012 IMPORT/EXPORT HAZARDOUS CHEMICALS (PIC)(689/2008)
EC 1272/2013 SUBSTANCE RESTRICTION (PAHs)
UN JUN/2012 GESAMP/EHS Composite List

From country-specific regulations:

BE KB 2011.06.01 Grenswaarden
CA OHS guideline 5.48-1 (2013-05-01)
CA Ontario OHS-act RRO1990 regulation 833 (2013-01-01)
CA Quebec chapter S-2.1 (2013-07-01)
DE TRGS-900 grenzwerten
DE TRGS-910 Ausschuss für Gefahrstoffe 2012
DE TRGS-510 Lagerung von Gefahrstoffen 2010(LGK)
DE 1999 Verwaltungsvorschrift wassergefährdende Stoffe (VwVwS/WGK)
FR INRS ED 984
NL ARBO A&V/2007/38900
NL Staatscouranten Grenswaarden tot en met 2011
NL Waterbezwaarlijkheidscategorisatie (ABM)
UK Control of Substances Hazardous to Health Regulations 2005
UK EH40/2005 Workplace exposure limits 2011

16.4. Classification for mixtures and used evaluation method according to regulation EC 1207/2008 (CLP)

hazard [category]:	Class of Classification procedure
* acute toxicity oral[Cat.4], H302	Calculation method.
* skin corrosion or irritation[Cat.2], H315	

```
                    Expert judgement and weight of evidence determination.
* skin sensitisation[Cat.1], H317
                    Expert judgement and weight of evidence determination.
* eye damage or irritation[Cat.1], H318
                    Expert judgement and weight of evidence determination.
* reproductive toxicity[Cat.2], H361
                    Expert judgement and weight of evidence determination.
* stot repeated exposure[Cat.1], H372
                    Expert judgement and weight of evidence determination.
* chronic aquatic hazard[Cat.3], H412
                    Calculation method.
* eye damage or irritation[Cat.2], H319
                    Expert judgement and weight of evidence determination.
* stot single exposure[Cat.3_respiratory_irritation], H335
                    Expert judgement and weight of evidence determination.
* chronic aquatic hazard[Cat.2], H411
                    Calculation method.
* reproductive toxicity[Cat.2], H361F
                    Expert judgement and weight of evidence determination.
* chronic aquatic hazard[Cat.4], H413
                    Calculation method.
* chronic aquatic hazard[Cat.1], H410
                    Calculation method.
* germ cell mutagenicity[Cat.2], H341
                    Expert judgement and weight of evidence determination.
```

16.5. Full text of R-phrases mentioned in sections 2 to 15.

```
XN............Harmful
R22...........Harmful if swallowed
R43...........May cause sensitisation by skin contact
XI............Irritant
R38...........Irritating to skin
R41...........Risk of serious damage to eyes
R43...........May cause sensitisation by skin contact
N.............Dangerous for the environment
XI............Irritant
R36/37/38.....Irritating to eyes, respiratory system and skin
R51/53........Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic
                    environment
T.............Toxic
R22...........Harmful if swallowed
R36...........Irritating to eyes
R43...........May cause sensitisation by skin contact
R48/23........Toxic  danger of serious damage to health by prolonged exposure through
                    inhalation
XN............Harmful
R62...........Possible risk of impaired fertility
XI............Irritant
R36/38........Irritating to eyes and skin
R43...........May cause sensitisation by skin contact
XI............Irritant
R43...........May cause sensitisation by skin contact
R53...........May cause long-term adverse effects in the aquatic environment
```

16.6. Full text of H-phrases mentioned in sections 2 to 15.

```
H302..........Harmful if swallowed.
H317..........May cause an allergic skin reaction.
H315..........Causes skin irritation.
H318..........Causes serious eye damage.
```

H319.....Causes serious eye irritation.
H335.....May cause respiratory irritation.
H411.....Toxic to aquatic life with long lasting effects.
H372.....Causes damage to organs through prolonged or repeated exposure .
H361f.....Suspected of damaging fertility.
H413.....May cause long lasting harmful effects to aquatic life.
H412.....Harmful to aquatic life with long lasting effects.
EUH208.....Contains . May produce an allergic reaction.
EUH210.....Safety data sheet available on request.

16.7. Training advice.

not available

16.8. Further Information.

The information disclosed in this Safety Datasheet is believed to be correct to the best of out current knowledge and experience. It only relates to the specific product designated herein and it may not be valid when said product is used in combination with any other material or in any process, unless specified in the text. This document aims to provide the necessary health and safety information of the product and is not to be considered a warranty or quality specification. It is the responsibility of the user to comply with local legislation relating to safety, health, environment and waste management.

<Exposure Scenario to be annexed to this SDS after REACH registration is completed >
<End of Safety Data Sheet>