

## BB Series UV Digital Ink- White

**Section 1: Product Identification**1.1 Product identifier

**Product name** BB Series UV Digital Ink- White

**CAS number** Not applicable

**Registration No.** Not applicable

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

**Identified uses** UV digital ink

**Uses advised against** At present no contraindicated use has been identified

1.3 Details of the supplier of the safety data sheet**Supplier**

Inkcups Now, Corp.  
310 Andover Street  
Danvers, MA 01923  
USA

Tel.: 978.646.8980  
Fax: 978.646.8981  
Email: info@inkcups.com

1.4 Emergency telephone numbers

European emergency phone number : 112

United-Kingdom  
National Chemical Emergency Centre Tel: 01865 407 333

Ireland  
National Poisons Information Centre (NPIC)  
01 809 2566 (24/7 for professionals)  
01 809 2166 (9am – 5pm, Mo-Fr for public)

## Section 2: Hazards Identification

### 2.1. Classification of the substance or mixture

#### Classification (EC No.1272/2008)

Skin Irrit. 2	H315	Aquatic Chronic 2	H411
Eye Dam. 1	H318		
Skin Sens. 1A	H317		
Repr. 2	H361		
STOT RE 2	H373		

The full text for all hazard classes and categories and H hazard statements is displayed in Section 16.

### 2.2. Label elements

Labeling according to Regulation (EC) No.1272/2008

#### Hazard pictograms

#### Signal word

Danger



#### Hazard statements

H315	Causes skin irritation.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H361	Suspected of damaging fertility or the unborn child .
H373	May cause damage to organs through prolonged or repeated exposure .
H411	Toxic to aquatic life with long lasting effects.

#### Precautionary statements

P264	Wash ... thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P281	Use personal protective equipment as required.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P302+P352	IF ON SKIN: Wash with plenty of water/...
P321	Specific treatment (see ... on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/...
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P391	Collect spillage.
P405	Store locked up.

### 2.3. Other hazards

Handle with care, not all the toxicological properties of this product are known.

UV inks: Exposure to direct sunlight or storage temperatures above 60°C may cause an uncontrolled exothermic polymerization.

### Section 3: Composition/information on ingredients

#### 3.1 Substances

#### Classification (EC No. 1272/2008)

%

Not applicable

#### 3.2. Mixtures

#### Hazardous ingredients

#### Classification (EC No. 1272/2008)

%

<b>CAS :</b> 5117-12-4 <b>CE :</b> 418-140-1 <b>INDEX :</b> 613-222-00-3 <b>REACH:</b> 01-0000016491-73-0000	4-(1-oxo-2-propenyl)-morpholine	Acute Tox. 4 (oral) - H302 Eye Dam. 1 - H318 Skin Sens. 1B - H317 STOT RE 2 - H373	20-30
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<b>CAS :</b> 66492-51-1 <b>CE :</b> 266-380-7 <b>INDEX :</b> <b>REACH:</b> 01-2119976303-36	(5-ethyl-1,3-dioxan-5-yl)methyl acrylate	Skin Irrit. 2 - H315 Skin Sens. 1B - H317 Aquatic Chronic 2 - H411	5-10
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<b>CAS :</b> 84100-23-2 <b>CE :</b> 282-104-8 <b>INDEX :</b> <b>REACH:</b> 01-2120735441-62	4-(1,1-dimethylethyl)cyclohexyl acrylate	Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1A - H317 STOT SE 3 (resp) - H335 Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411	5-10
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<b>CAS :</b> 75980-60-8 <b>CE :</b> 278-355-8 <b>INDEX :</b> 015-203-00-X <b>REACH:</b> 01-2119972295-29	Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Skin Sens. 1B - H317 Repr. 2 - H361 Aquatic Chronic 2 - H411	5-10
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## Section 4: First aid measures

### 4.1. Description of first aid measures

#### **First aid measures after inhalation**

- Remove the exposed person to fresh air.
- If breathing difficulties persist, seek medical advice.

#### **First aid measures after skin contact**

- If UV inks are splashed, remove contaminated clothing, avoid exposure to direct sunlight or any source of UV radiation.
- Rinse with lots of water for at least 10 minutes, do not use solvents or diluents, use a skin cleanser (soap etc.).
- Seek medical advice if necessary.

#### **First aid measures after eye contact**

- Avoid exposure to direct sunlight or any source of UV radiation.
- Remove contact lenses if present and easy to do, rinse with plenty of water for at least 10 minutes, holding the eyelids apart.
- Seek medical advice if necessary.

#### **First aid measures after ingestion**

- DO NOT INDUCE VOMITING.
- In the event of spontaneous vomiting, clear the airway and seek immediate medical attention.

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

The severity of the symptoms described will vary depending on the intensity and duration of exposure.

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

No specific first aid measures.

## Section 5: Firefighting measures

### 5.1. Extinguishing media

<b>Suitable</b>	Powders, foams and water spray
<b>Unsuitable</b>	Pressurized water

### 5.2. Specific hazards arising from the substance or mixture

- Some products may polymerize at high temperatures
  - The polymerization of this product is sufficiently exothermic to cause thermal decomposition or explosion of containers
  - Thermal decomposition may release irritating fumes, gases or flames, which can, in turn, cause health problems
- In case of fire, a dense, black, acrid smoke is produced

### 5.3. Advice for firefighters

- Firefighters are to be equipped with self-contained breathing apparatus.
- Spray any unopened drums exposed to fire shouldwith water to keep them cool.
- Keep run-off water out of sewers and waterways. In the event of spillage, notify the competent authorities.

## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Keep away from sources of ignition, do not breath vapour (see sections 7 and 8), avoid contact with skin and eyes, remove contaminated clothing immediately.

### 6.2. Environmental precautions

Do not discharge into drains or water courses; comply with current legislation.

### 6.3. Methods and materials for containment and cleaning up

Use absorbent materials (e.g. sand, diatomaceous earth), clean with a detergent, avoid the use of solvents, dispose of waste in accordance with current legislation.

### 6.4. Reference to other sections

Refer to Section 8 for personal protective equipment and Section 13 for disposal considerations.

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

- Before handling, refer to Sections 3, 8 and 11
- Anyone with a history of skin sensitization must handle the product with special care
- Avoid breathing vapour (see sections 7 and 8)
- Avoid contact with skin and eyes
- Follow relevant national occupational hygiene regulations
- Do not drink, eat or smoke in work areas
- Wash hands after use

### 7.2. Conditions for safe storage, including any incompatibilities

- Store in original containers at room temperature
- Opened containers must be tightly closed and kept upright to prevent leaks
- Keep away from sources of ignition, protect from direct sunlight
- Keep away from oxidizing agents, acids and bases

### 7.3. Specific end use(s)

Refer to Section 1.2.

## Section 8: Exposure controls / personal protection

### 8.1. Control parameters

#### 4-(1-oxo-2-propenyl)-morpholine

**DNEL (derived no effect limits)** Undetermined

**OEL (occupational exposure limits)**

**ELV (emission limit value)**

**PNEC (predicted no effect concentration)** Undetermined

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#### (5-ethyl-1,3-dioxan-5-yl)methyl acrylate

**DNEL** 0.0014 mg/kg (soil) - 0.004 mg/l (fresh water) - 0.019 mg/kg (fresh water sediment) - 0.0019 mg/kg (marine sediment)

**OEL**

**ELV**

**PNEC** Undetermined

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#### 4-(1,1-dimethylethyl)cyclohexyl acrylate

**DNEL** 2.5 mg/m<sup>3</sup> (Workers; Inhalation; Long Term-Systemic Effects) - 0.7 mg/kg (Workers; Dermal LT-SE) - 0.4 mg/m<sup>3</sup> (Consumers; Inhalation; LT-SE) - 0.25 mg/kg (Consumers; Dermal; LT-SE) - 0.25 mg/kg (Consumers; Oral; LT-SE)

**OEL**

**ELV**

**PNEC** 0.00054 mg/l (fresh water) - 0.000054 mg/l (sea water) - 0.491 mg/kg (fresh water sediment) - 0.0492 mg/kg (marine sediment) - 0.0976 mg/kg (soil)

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#### Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

**DNEL** Undetermined

**OEL**

**ELV**

**PNEC** 0.00353 mg/l (fresh water) - 0.00353 mg/l (sea water) - 0.29 mg/kg (fresh water sediment) - 0.0557 mg/kg (soil)



DNEL

OEL

ELV

PNEC

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DNEL

OEL

ELV

PNEC

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DNEL

OEL

ELV

PNEC

## 8.2. Exposure controls

8.2.1. Appropriate technical controls  
Refer to Section 7.1.

8.2.2. Personal protective equipment



### **Eye and face protection**

The use of safety goggles is recommended to protect against splashing.

### **Hand protection**

It is possible to use special protective creams; these should not be applied after contamination.  
Do not use gloves made of natural rubber or PVC. It is possible to use disposable single-use gloves.

### **Skin protection**

Wear suitable clothing, do not wear contaminated clothing.

### **Respiratory protection**

In the case of frequent use or heavy exposure, respiratory protection may be necessary. Wear an appropriate mask.  
Vapor extraction or effective ventilation should be provided at workstations.

8.2.3. Environmental exposure controls

Do not discharge into drains or water courses.

## Section 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Colour</b>	Undetermined
<b>Odour</b>	Undetermined
<b>Odour threshold</b>	Undetermined
<b>pH</b>	Undetermined
<b>Melting / freezing (°C) point</b>	Undetermined
<b>Initial boiling point and boiling range (° C)</b>	Undetermined
<b>Flash point (° C)</b>	> 100
<b>Evaporation rate</b>	Undetermined
<b>Flammability</b>	Undetermined
<b>Upper / lower flammability limits</b>	Undetermined
<b>Vapour pressure</b>	Undetermined
<b>Vapour density</b>	Undetermined
<b>Relative density</b>	Undetermined
<b>Solubility</b>	Undetermined
<b>n-octanol / water partition coefficient</b>	Undetermined
<b>Auto ignition temperature</b>	Undetermined
<b>Thermal decomposition temperature</b>	Undetermined
<b>Viscosity</b>	Undetermined

### 9.2. Other information

No additional information available

## Section 10: Stability and reactivity

### 10.1. Reactivity

Reacts with oxidizing agents, acids, bases.  
Solar radiation and heat can cause hazardous polymerization.

### 10.2. Chemical stability

The product is stable under the handling and storage conditions recommended in Section 7.

### 10.3. Possibility of hazardous reactions

UV-curable formulations contain chemicals that can become unstable (exothermic reactions) under the following conditions:

### 10.4. Conditions to avoid

Prolonged exposure to temperatures above 40 °C  
Prolonged exposure to light and UV radiation

### 10.5. Incompatible materials

Oxidizing agents, acids, bases.

### 10.6. Hazardous decomposition products

Thermal decomposition may release irritating fumes, which can, in turn, cause health problems

## Section 11: Toxicological Information

### 11.1. Information on toxicological effects

No experimental data is available for this product. This information was obtained from tests carried out by our suppliers. This product has been analyzed according to EC Regulation 1272/2008 and classified according to the toxicological hazards of its ingredients.

#### **Acute toxicity**

4-(1-oxo-2-propenyl)-morpholine(5117-12-4)

LD50 Oral rat = 588 mg/kg - LC50 inhalation rat = 5.28 mg/l-4h - LD50 dermique lapin > 2000 mg/kg

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate(66492-51-1)

LD50 Oral rat > 2000 mg/kg - LD50 dermique lapin > 2000 mg/kg

4-(1,1-dimethylethyl)cyclohexyl acrylate(84100-23-2)

LD50 Oral rat = 5000 mg/kg - LD50 dermique lapin > 2000 mg/kg

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide(75980-60-8)

LD50 Oral rat > 5000 mg/kg - LD50 dermique lapin > 2000 mg/kg

#### **Skin corrosion / irritation**

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate ( 66492-51-1 ) : Irritant (rabbit) OECD 404

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide ( 75980-60-8 ) : Negative (rabbit) OECD 404

4-(1,1-dimethylethyl)cyclohexyl acrylate ( 84100-23-2 ) : Irritant

#### **Serious eye damage / eye irritation**

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate ( 66492-51-1 ) : Irritant (rabbit) OECD 405

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide ( 75980-60-8 ) : Negative (rabbit) OECD 405

4-(1,1-dimethylethyl)cyclohexyl acrylate ( 84100-23-2 ) : Irritant

#### **Respiratory or skin sensitization**

No specific data available

#### **Germ cell mutagenicity**

4-(1-oxo-2-propenyl)-morpholine ( 5117-12-4 ) : Negative Neg/Pos (Mouse - OECD 474)

4-(1,1-dimethylethyl)cyclohexyl acrylate ( 84100-23-2 ) : Negative (In vitro; OECD 471)

#### **Carcinogenicity**

Given available data, classification requirements have not been met.

#### **Reproductive toxicity**

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide ( 75980-60-8 ) : Repr. 2

#### **Specific target organ toxicity (single exposure)**

No specific data available

#### **Specific target organ toxicity (repeated exposure)**

No specific data available

#### **Aspiration hazard**

No specific data available

#### **Symptoms/injuries after inhalation**

Prolonged contact may cause irritation to respiratory system.

**Symptoms/injuries after ingestion**

Ingestion may cause nausea, weakness and effects on the central nervous system.

**Symptoms/injuries after skin contact**

The acrylic components of UV-curable inks have irritant properties. Prolonged contact with skin or mucous membranes may cause allergic reactions (rash, dermatitis, blistering)

**Symptoms/injuries after eye contact**

Contact with the eyes may cause irritation.

**Section 12: Ecological information**

No experimental data is available for this product. The information presented below relates to the individual ingredients for this product. This information was obtained from tests carried out by our suppliers.

**12.1. Toxicity**

4-(1-oxo-2-propenyl)-morpholine (5117-12-4) :

CE50/EC50 : 120.00 mg/l-48h Daphnia

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate (66492-51-1) :

CL50/LC50 : 4.00 mg/l - 96h Oncorhynchus mykiss - NOEC/NOEL : 9.00 mg/l Desmodemus subspicatus (72h) - CE50/EC50 : 20.00 mg/l-48h Daphnia magna

4-(1,1-dimethylethyl)cyclohexyl acrylate (84100-23-2) :

CL50/LC50 : 1.28 mg/l - 96h Brachydanio rerio (OECD 203) - CE50/EC50 : 11.00 mg/l-48h Daphnia magna

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8) :

CE50/EC50 : 3.53 mg/l-48h Daphnia magna

**12.2. Persistence and degradability**

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate ( 66492-51-1 ) : 28% after 28 days (OECD 301B)

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide ( 75980-60-8 ) : 0-10% (28 days)

**12.3. Bioaccumulative potential**

4-(1-oxo-2-propenyl)-morpholine ( 5117-12-4 ) : log Pow: -0.46

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate ( 66492-51-1 ) : 0.9 (log Kow)

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide ( 75980-60-8 ) : log Pow: 3.1

**12.4. Mobility in soil**

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate ( 66492-51-1 ) : 1.06 (log Koc)

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide ( 75980-60-8 ) : Koc 784.8

**12.5. Results of PBT (persistent, bioaccumulative and toxic) and vPvB (very persistent and very bioaccumulative) assessment**

This mixture does not contain any PBT or vPvB substances

**12.6. Other adverse effects**

No additional adverse effects

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

Waste and empty containers must be handled in accordance with local regulations.

Waste should not be disposed of with household waste or discharged into drains or water courses.

### European Waste Catalogue

08 03 12 \*Ink waste containing hazardous substances

## Section 14: Transport information

### Roads ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road)

UN number	3082
Shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class	9
Packing group	III
Labels	9
Classification code	M7
Hazard identification no.	90
Tunnel restriction code	3(-)

### Railways RID (Regulations concerning the International Carriage of Dangerous Goods by Rail)

UN number	3082
Shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class	9
Packing group	III
Labels	9
Classification code	M7
Hazard identification no.	90

### Sea IMDG (International Maritime Dangerous Goods Code)

UN number	3082
Shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class	9
Packing group	III
Labels	9
Classification code	M7
Hazard identification no.	

### Air OACI/IATA

UN number	3082
Shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class	9
Packing group	III
Labels	9
Classification code	M7
Hazard identification no.	

**Pollutant** Yes

### Potentially hazardous products

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate  
4-(1,1-dimethylethyl)cyclohexyl acrylate

### Product eligible for exemption under special provisions A197 (IATA), 375 (ADR) and 2.10.2.7 (IMDG)

### Special precautions to be taken by the user

No particular precautions specified

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## Section 15: Regulatory Information

- This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 of 18 December 2006 (known as REACH).
- The product is classified and labeled in accordance with Regulation (EC) No. 1272/2008 of 16 December 2008 (known as CLP).
- This safety data sheet complies with the requirements of GB/T16483-2008 Safety data sheet for chemical products - content and order of sections.
- The products is classified and labeled in accordance with GB15258-2009 general rules for preparation of precautionary label for chemicals.

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

#### European Union

Comply with Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.  
Follow Directive 94/33/EC on the protection of young people at work.

#### China

Follow law of the Peoples Republic of China on Prevention and Control of Occupational Diseases.

### 15.2. Chemical safety assessment

No chemical safety evaluation has been performed.

## Section 16: Other information

### General information

This product is intended for professional users. See technical data sheet for additional information on intended use.

The information contained in this safety data sheet is based on our knowledge at the date of publication, and relates to the product concerned and information provided by our suppliers for the ingredients used in the product.

Users should be aware of the potential risks when a product is used for purposes other than those for which it was intended

**Revisions**

Revision date 20/12/18  
Revision 0  
SDS No. 4323  
Date 20/12/18

**Hazard statements in full**

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 .

H373 : May cause damage to organs through prolonged or repeated exposure .

H411 : Toxic to aquatic life with long lasting effects.

**Abbreviations and acronyms used**

CAS Chemical Abstract Service

EINECS European Inventory of Existing Commercial Chemical Substances

REACH Registration, Evaluation, Authorisation of Chemicals

**Method of assessing information on hazards****Method used for classification**

Skin Irrit. 2	H315	Calculation based method
Skin Sens. 1A	H317	Calculation based method
Eye Dam. 1	H318	Calculation based method
Repr. 2	H361	Calculation based method
STOT RE 2	H373	Calculation based method
Aquatic Chronic 2	H411	Calculation based method