SAFETY DATA SHEET

Date of issue: 20/11/2014 Date of revision: 27/02/2019 Version no.: 3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Product name: Dimengel 100 base
Product description: Photo curable resin

1.2 Relevant identified uses of the substance or mixture and uses advised against
Common uses: Printing/additive manufacturing.

1.3 Details of the supplier of the safety data sheet
N/A

E-mail address of person responsible for this SDS: N/A

1.4 Emergency telephone number
Emergency telephone number (with hours of operation): N/A

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to GHS:
Skin Irrit. 2 H315
Eye Irrit. 2A H319
Skin Sens. 1 H317
STOT SE 3 H335
Repr. 2 H361
Aquatic Acute 1 H400
Aquatic chronic 2 H411

Classification according to 29 CFR 1910.1200 (OSHA HCS):
Skin Irrit. 2 H315
Eye Irrit. 2A H319
Skin Sens. 1 H317
STOT SE 3 H335
Repr. 2 H361
Aquatic Acute 1 H400
Aquatic chronic 2 H411

Classification in accordance to Regulation (EC) No. 1272/2008 (CLP):
Skin irrit. 2 H315
Eye irrit. 2 H319
Skin Sens. 1 H317
STOT SE 3 H335
Aquatic Acute 1 H400
Aquatic chronic 2 H411

See section 16 for the full text of the H-statements declared above.

2.2 Label elements
Labelling according to GHS:
Hazard pictogram(s):

Signal word: Warning

Hazard statement(s):
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H361: Suspected of damaging fertility or the unborn child.
H400: Very toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statement(s):
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+313: If exposed or concerned: Get medical advice/attention.

Labelling according to 29 CFR 1910.1200 (OSHA HCS)
Hazard pictogram(s):

Signal word: Warning

Hazard statement(s):
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
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Hazard pictogram(s):

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Hazard statement(s):
H315: Causes skin irritation.
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P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.

2.3 Other hazard
Not available

SECTION 3: Composition / information on ingredients

3.2 Mixtures:

Ingredient name	Identifiers	%	CLP Classification	GHS Classification	OSHA HCS
Isobornyl acrylate	CAS number: 5888-33-5 EC number: 227-561-6	25-70	Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1B H317 STOT SE 3 H335 Aquatic Acute 1 H400 Aquatic chronic 2 H411	Skin Irrit. 2 H315 Eye Irrit. 2A H319 Skin Sens. 1B H317 STOT SE 3 H335 Aquatic Acute 1 H400 Aquatic chronic 2 H411	Skin Irrit. 2 H315 Eye Irrit. 2A H319 Skin Sens. 1B H317 STOT SE 3 H335 Aquatic Acute 1 H400 Aquatic chronic 2 H411
Tricyclodecane dimethanol diacrylate	CAS number: 42594-17-2 EC number: 255-901-3	30-60	Skin Sens. 1 H317 Aquatic Chronic 2 H411	Skin Sens. 1 H317 Aquatic Acute 2 H401 Aquatic Chronic 2 H411	Skin Sens. 1 H317 Aquatic Acute 2 H401 Aquatic Chronic 2 H411
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	CAS number: 75980-60-8 EC number: 278-355-8	0.5-1	Repr. 2 H361f Aquatic Chronic 2 H411	Repr. 2 H361 Aquatic Chronic 2 H411	Repr. 2 H361 Aquatic Chronic 2 H411
Camphene	CAS number: 79-92-5 EC number: 201-234-8	<0.35	Flam. Sol. 2 H228 Eye Irrit. 2 H319 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M-Factor Chronic = 1	Flam. Sol. 2 H228 Eye Irrit. 2A H319 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M-Factor Chronic = 1	Flam. Sol. 2 H228 Eye Irrit. 2A H319 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M-Factor Chronic = 1
1,7,7-Trimethyltricyclo[2.2.1.02,6]heptane	CAS number: 508-32-7 EC number: 208-083-7	<0.35	Eye Irrit. 2 H319 Aquatic Acute 1 H400 Aquatic Chronic 1 H410	Eye Irrit. 2A H319 Aquatic Acute 1 H400 Aquatic Chronic 1 H410	Eye Irrit. 2A H319 Aquatic Acute 1 H400 Aquatic Chronic 1 H410

2-Propenoic acid	CAS number: 79-10-7 EC number: 201-177-9	≤0.12	Flam. Liq. 3 H226 Acute Tox. 4 H302, H332 Skin Corr. 1A H314 Eye Dam. 1 H318 STOT SE 3 H335 Aquatic Acute 1 H400 Aquatic Chronic 2 H411	Flam. Liq. 3 H226 Acute Tox. 4 H302, H332 Skin Corr. 1A H314 Eye Dam. 1 H318 STOT SE 3 H335 Aquatic Acute 1 H400 Aquatic Chronic 2 H411	Flam. Liq. 3 H226 Acute Tox. 4 H302, H332 Skin Corr. 1A H314 Eye Dam. 1 H318 STOT SE 3 H335 Aquatic Acute 1 H400 Aquatic Chronic 2 H411

See section 16 for the full text of the H-statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eyes contact: In case of contact with eyes, rinse immediately with plenty of soap and water for at least 15 minutes. Get medical attention.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes. Get medical attention.

Inhalation: Remove the victim from site of exposure to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration. Get medical attention.

Ingestion: **Do not induce vomiting.** If victim is conscious, wash mouth thoroughly with water. Never give anything by mouth to an unconscious person. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

See section 2.2 (Label elements) and/or section 11 (Toxicological information) for the most important known symptoms and effects.

4.3 Indication of any immediate medical attention and special treatment needed

Not available

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable: Foam, carbon dioxide, dry chemical.
Not suitable: Solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating and toxic fumes.

5.3 Advice for firefighters

Special protective equipment for fire fighters: Fire fighters should wear full protective clothing and self-contained breathing apparatus in positive pressure mode. Cool containers exposed to flame with water spray until well after fire is out.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Ventilate area of spill.

6.2 Environmental precautions
Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations.

6.4 Reference to other sections
See Section 1 for emergency contact information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapors, spray, mist or gas. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information measures. Avoid release to the environment.

7.2 Conditions for safe storage, including any incompatibilities
Storage: Keep container tightly closed in a dry, cool and well-ventilated place. Protect from heat, direct sunlight. Keep away from oxidizing agents, reducing agents, acids, bases, free radical generators, inert gas, oxygen scavenger, peroxides. An air space is required above the liquid in all containers; avoid storage under an oxygen-free atmosphere.

7.3 Specific end use(s): N/A

SECTION 8: Exposure control/personal protection

8.1 Control parameters
Occupational exposure limits values: N/A

8.2 Exposure controls

Engineering measures
Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Person Protective measures
Respiratory protection: Suitable respirator. Be sure to use an approved/certified equipment or equivalent equipment. Wear appropriate respirator when ventilation is inadequate.
Hand protection: Wear protective gloves to prevent skin exposure.
Eye protection: Wear protective safety glasses.
Skin protection: Wear appropriate long-sleeved clothing to minimize skin contact.

Environmental exposure controls: Not available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
Appearance: transparent-white thick liquid-gel
Odour: characteristic
Odour threshold: N/A
pH: N/A
Melting point/Freezing point: N/A

Initial boiling point/boiling range: N/A
Flash point: N/A
Evaporation rate: N/A
Flammability: N/A
Upper/lower flammability or explosive limits: N/A
Vapor pressure: N/A
Vapor density: N/A
Relative density: N/A
Solubility(ies): N/A
Partition coefficient Octanol/Water: N/A
Auto-ignition temperature: N/A
Decomposition temperature: N/A
Viscosity: N/A
Explosive properties: N/A
Oxidizing properties: N/A

9.2 Other information:
N/A

SECTION 10: Stability and reactivity

10.1 Reactivity
Not available

10.2 Chemical stability
The product is stable under normal handling and storage conditions described in Section 7.

10.3 Possibility of hazardous reactions
Hazardous reactions are not expected, under normal conditions of storage and use.
Polymerization is exothermic and can degenerate into an uncontrolled reaction.
Inhibitors have been added to stabilize isobornyl acrylate. Maintaining air in the storage containers is important to keep inhibitors active. Unless inhibited, hazardous polymerisation may occur.
Tricyclodecane dimethanol diacrylate may polymerize.

10.4 Conditions to avoid
Heat, direct sunlight, ultraviolet light.

10.5 Incompatible materials
Oxidizing agents, reducing agents, acids, bases, free radical generators, inert gas, oxygen scavenger, peroxides.

10.6 Hazardous decomposition products
Other decomposition products: not available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

Product/ingredient name	Test	Species	Dose
Isobornyl acrylate	LD50, Oral LD50, Administration onto the skin	Rat Rabbit	4890 mg/kg >5000 mg/kg
Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide	LD50, Oral	Rat	>5000 mg/kg

Skin corrosion/irritation: Not available

Serious eye damage/irritation: Not available

Respiratory or skin sensitization: Not available

Germ cell mutagenicity: Not available

Carcinogenicity: Not available

Reproductive toxicity: Not available

Specific target organ toxicity (single exposure): Not available

Specific target organ toxicity (repeated exposure): Not available

Aspiration hazard: Not available

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia
Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide	IC50/72h, 1-10 mg/l	LC50/96h, 1-10 mg/l	EC50/48h, 1-10 mg/l
Isobornyl acrylate	ErC50/72 h (Pseudokirchneriella subcapitata) 1.98 mg/l NOECr/72 h (Pseudokirchneriella subcapitata) 0.405 mg/l	LC50/96h (Danio rerio (zebra fish)) 0.7 mg/l	NOEC/21d (Daphnia magna (Water flea)) 0.092 mg/l

12.2 Persistence and Degradability
Isobornyl acrylate
Not readily biodegradable: 57% after 28 d.

12.3 Bioaccumulative potential
Isobornyl acrylate
Partition coefficient: n-octanol/water: log Kow: 4.52, Potentially bioaccumulable.

12.4 Mobility in soil
Not available

12.5 Results of PBT and vPvB assessment
Not available

12.6 Other adverse effects
Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Packing
Empty containers should be taken for local recycling, recovery or waste disposal.

SECTION 14: Transport information

14.1 Un number
ADR/RID: 3082 IMDG: 3082 IATA: 3082 DOT (US): 3082

14.2 UN proper shipping name
ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ISOBORNYL ACRYLATE)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ISOBORNYL ACRYLATE)

IATA: Environmentally hazardous substance, liquid, n.o.s. (Isobornyl acrylate)

DOT (US): ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ISOBORNYL ACRYLATE)

14.3 Transport hazard class(es)

ADR/RID: 9	IMDG: 9	IATA: 9	DOT (US): 9

14.4 Packing group

ADR/RID: III	IMDG: III	IATA: III	DOT (US): III

14.5 Environmental hazard
Marine pollutant: yes

14.6 Special precautions for user
N/A

14.7 Transport to bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not available

SECTION 15: Regulatory information

This SDS complies with the following requirements of:
EU Regulation (EC) No.1907/2006 (REACH) including amendments
Regulation (EC) No.1272/2008 (CLP)
29 CFR 1910.1200 (OSHA HCS)
Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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

California Prop. 65 Components
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. (Benzene, methyl- 108-88-3 ≤ 0.6%)

TSCA inventory
The substances in this product are included on or exempted from the TSCA inventory.

15.2 Chemical safety assessment
Not available

SECTION 16: Other information

HMIS Rating

Health hazard: 2	Chronic Health Hazard:*	Flammability: 0	Physical Hazard: 0

NFPA Rating

Health hazard: 2	Flammability: 0	Instability: 0

Full text of Hazards Statements referred to in sections 2 and 3:
Flam. Liq. - Flammable liquid
Flam. Sol. - Flammable solid
Acute Tox. - Acute toxicity
Skin Irrit. - Skin irritation
Skin Sens. - Skin sensitization

Eye Irrit. - Eye irritation
Skin Corr. - Skin corrosion
Eye Dam. - Serious eye damage
STOT SE - Specific target organ toxicity — single exposure
Repr. - Reproductive toxicity
Aquatic Acute - Hazardous to the aquatic environment
Aquatic Chronic - Hazardous to the aquatic environment
H228: Flammable solid.
H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H332: Harmful if inhaled.
H314: Causes severe skin burns and eye damage.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H319: Causes eye irritation.
H335: May cause respiratory irritation.
H361: Suspected of damaging fertility or the unborn child.
H361f: Suspected of damaging fertility.
H400: Very toxic to aquatic life.
H401 Toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects
H411: Toxic to aquatic life with long lasting effects.

Training advice: Before using/handling the product one must read carefully present SDS.

Key Legend Information:
CAS- Chemical Abstract Service
ACGIH- American Conference of Governmental Industrial Hygienists
OSHA- Occupational Safety and Health Administration
NTP- National Toxicology program
IARC- International Agency for Research on Cancer
N/A- Not available
H-statements- Hazard statements
TLV- Threshold Limit Value
TWA- Time-weighted average
STEL- Short-Term Exposure Limit
CSA- Chemical safety assessment

Version	Date	Prepared by	Quality Auditor
2	20/12/2017	D.A	K.B
3	27/02/2019	K.B	M.H