

Safety Data Sheet

Revision: 29 March 2023

Supersedes: 12 January 2023

IKONICS®

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name: Image Mate DC 521, DC 521 Z-1, DC 521 Z-2, DC 521 Clear

Product Description: Blue, purple or white liquid

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

Relevant identified use(s): Water-based screen printing emulsion

1.3 Details of the supplier of the safety data sheet

Manufacturer IKONICS
4832 Grand Ave.
Duluth, MN 55807
United States
www.ikonics.com
sds@ikonics.com

Telephone (General): (218) 628-2217

Telephone (General): (800) 328-4261 - Toll free

1.4 Emergency telephone number

Chemtrec: 1-800-424-9300 - Within USA and Canada

+1 703-527-3887 - Outside USA and Canada (collect calls accepted)

Section 2: Hazards Identification

EU/EEC

According to EU Directive 1272/2008 (CLP)/REACH 1907/2006 [amended by 2020/878]

2.1 Classification of the substance or mixture

CLP

| Hazard Class | Category | Code |
|---|----------|------|
| Skin Sensitization | 1 | H317 |
| Reproductive Toxicity | 1B | H360 |
| Hazardous to the Aquatic Environment, Chronic | 3 | H412 |

2.2 Label Elements

CLP

DANGER



| Hazard Statement | Code |
|---|--------|
| May cause an allergic skin reaction | H317 |
| May damage fertility or the unborn child | H360 |
| Harmful to aquatic life with long lasting effects | H412 |
| Contains sensitizing substance (Pentaerythritol, ethoxylated, esters with acrylic acid; Pentaerythritol triacrylate; Pentaerythritol tetraacrylate; 2-Phenoxyethyl acrylate). May produce an allergic reaction. | EUH208 |

Precautionary Measures

| Category | Code | Statement |
|-------------------|--|--|
| Prevention | P203 | Obtain, read and follow all safety instructions before use. |
| | P261 | Avoid breathing dust/fume/gas/mist/vapors/spray. |
| | P272 | Contaminated work clothing should not be allowed out of the workplace. |
| | P273 | Avoid release to the environment. |
| | P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| Response | P302+P352 | IF ON SKIN: Wash with plenty of soap and water. |
| | P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| | P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| | P337+P313 | If eye irritation persists: Get medical advice/attention. |
| | P318 | If exposed or concerned, get medical advice. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. | |
| Storage | P405 | Store locked up. |
| Disposal | P501 | Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. |

2.3 Other Hazards

CLP

This mixture does not meet the criteria for persistent, bioaccumulative and toxic or very persistent and very bioaccumulative in accordance with REACH Annex XIII.

Endocrine Disrupting Properties

Human Health: This mixture does not contain components having endocrine disrupting properties in accordance with REACH Article 59(1), Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/603 at a concentration equal to or greater than 0.1% by weight.

Environment: This mixture does not contain components having endocrine disrupting properties in accordance with REACH Article 59(1), Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/603 at a concentration equal to or greater than 0.1% by weight.

UN GHS

According to UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Eighth Revised Edition

2.1 Classification of the substance or mixture

UN GHS

| Hazard Class | Category | Code |
|---|----------|------|
| Skin Sensitization | 1 | H317 |
| Reproductive Toxicity | 1B | H360 |
| Hazardous to the Aquatic Environment, Acute | 3 | H402 |
| Hazardous to the Aquatic Environment, Chronic | 3 | H412 |

2.2 Label Elements

UN GHS

DANGER



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|---|------|
| May cause an allergic skin reaction | H317 |
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2.3 Other hazards

UN GHS No data available

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

| Hazard Class | Category | Code |
|-----------------------|----------|------|
| Skin Sensitization | 1 | H317 |
| Reproductive Toxicity | 1B | H360 |

2.2 Label Elements

OSHA HCS 2012

DANGER



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|--|------|
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| Storage | P405 | Store locked up. |
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2.3 Other hazards

OSHA HCS 2012 No data available

Canada

According to WHMIS 2015

2.1 Classification of the substance or mixture

WHMIS 2015

| Hazard Class | Category | Code |
|-----------------------|----------|------|
| Skin Sensitization | 1 | H317 |
| Reproductive Toxicity | 1B | H360 |

2.2 Label Elements

WHMIS 2015

DANGER



| Hazard Statement | Code |
|--|------|
| May cause an allergic skin reaction | H317 |
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Precautionary Measures

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2.3 Other hazards

WHMIS 2015 No data available

2.4 Other information

NFPA



Section 3 - Composition/Information on Ingredients

3.1 Substances

3.2 Mixtures

| Chemical Name | CAS number | % | LD50/LC50 | Classifications According to Regulation/Directive |
|---|---------------|--------|--|--|
| Pentaerythritol, ethoxylated, esters with acrylic acid | 51728-26-8 | 3-5% | | GHS / CLP / OSHA / WHMIS: Eye Irrit. 2A; Skin Irrit. 2; Skin Sens. 1 |
| Aromatic urethane acrylate | Not available | 1-2% | | |
| 2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate | 9014-85-1 | < 0.8 | | GHS / CLP: Eye Irrit. 2; Aquatic Chronic 3 OSHA / WHMIS: Eye Irrit. 2 |
| 2-(hydroxymethyl)-2-[[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate (pentaerythritol triacrylate) | 3524-68-3 | < 0.6% | Ingestion/Oral-Rat LD50 1830 mg/kg; Skin-Rabbit LD50 4 mL/kg | GHS / CLP / OSHA / WHMIS: Skin Irrit. 2; Skin Sens. 1 |
| 2,2-bis[[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate (pentaerythritol tetraacrylate) | 4986-89-4 | < 0.6% | | GHS / CLP / OSHA / WHMIS: Eye Irrit. 2A; Skin Irrit. 2; Skin Sens. 1 |
| Ethyl 4-dimethylaminobenzoate | 10287-53-3 | < 0.4% | Ingestion/Oral-Rat LD50 >2000 mg/kg | GHS / CLP: Repr. 1B; Aquatic Chronic 2 OSHA / WHMIS: Repr. 1B |
| 2-Phenoxyethyl acrylate | 48145-04-6 | < 0.3% | Ingestion/Oral-Rat LD50 5145 mg/kg | GHS / CLP: Skin Sens. 1; Repr. 2; Aquatic Chronic 2 OSHA / WHMIS: Skin Sens. 1; Repr. 2 |
| 2-Isopropylthioxanthone | 5495-84-1 | < 0.3% | | GHS / CLP: Repr. 2; Aquatic Acute 1; Aquatic Chronic 1 OSHA / WHMIS: Repr. 2 |

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration and call 911 or emergency medical service.

Skin. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

Eye. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion. If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Rinse mouth. Never give anything by mouth to an unconscious person. If large quantities are swallowed, call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Refer to Section 11 – Toxicological Information

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable extinguishing media. SMALL FIRES: Dry chemical, CO₂, water spray or regular foam. LARGE FIRE: Water spray, fog or regular foam.

Unsuitable extinguishing media. No data available

Firefighting procedures. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep unauthorized personnel away. Ventilate closed spaces before entering. LARGE FIRES: Use extinguishing agent suitable for type of surrounding fire.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards. Material may burn, but does not ignite readily.

Hazardous combustion products. Products of combustion include: carbon oxides (CO_x).

5.3 Advice for firefighters

Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Wear positive pressure self-contained breathing apparatus (SCBA).

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency procedures. No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended.

Use normal clean up procedures.

6.2 Environmental precautions

LARGE SPILLS: Prevent entry into waterways, sewers, basements or confined areas

6.3 Methods and material for containment and cleaning up

Containment/clean-up measures. Use appropriate Personal Protective Equipment (PPE). Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in suitable container.

6.4 Reference to other sections

Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Use good safety and industrial hygiene practices.

7.2 Conditions for safe storage, including any incompatibilities

Keep container closed when not in use. Store away from extreme heat. Do not freeze. Ventilate enclosed areas.

7.3 Specific end use(s)

Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures/controls. Local exhaust is recommended but not required. Provide adequate ventilation as necessary.

Personal Protective Equipment

Pictograms



Respiratory: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face: Wear protective eyewear (goggles, face shield, or safety glasses).

Hands: Wear protective gloves - rubber or neoprene.

Skin/Body: Wear protective clothing - apron or other impervious body coverings.

General industrial hygiene considerations: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

Environmental exposure controls: No data available

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

| Material Description | | | |
|---------------------------------------|---|-------------------------------------|----------------------------------|
| Physical Form | Liquid | Appearance/Description | Viscous liquid |
| Color | Blue, purple or white | Odor | Slight acrylic odor |
| General Properties | | | |
| Boiling Point | 100 C(212 F) | Melting/Freezing Point | < 0 C (< 32 F) |
| Decomposition Temperature | Not relevant | pH | 4-5 |
| Density | 8.82 lbs/gal | Water Solubility | Miscible |
| Viscosity | 11,000-16,000 Centipoise (cPs, cP) or mPas @ 25 C (77 F) | Kinematic Viscosity | 10,400-15,100 mm ² /s |
| Explosive Properties | Not relevant | Oxidizing Properties | Not relevant |
| Volatility | | | |
| Vapor Pressure | No data available | Vapor Density | > 1 Air = 1 |
| Evaporation Rate | < 1, n-Butyl acetate = 1 | VOC (Wt.) | < 0.5% |
| Volatiles (Wt.) | 60-65 % | | |
| Flammability | | | |
| Flash Point | > 93.3 C (> 200 F) | UEL | Not relevant |
| LEL | Not relevant | Autoignition | Not relevant |
| Flammability (solid, gas) | Not relevant | | |
| Environmental | | | |
| Half-Life | No data available | Octanol/Water Partition coefficient | No data available |
| Coefficient of water/oil distribution | No data available | Bioaccumulation Factor | No data available |
| Bioconcentration Factor | No data available | Biochemical Oxygen Demand BOD/BOD5 | No data available |

| | | | |
|------------------------|-------------------|-------------|-------------------|
| Chemical Oxygen Demand | No data available | Persistence | No data available |
| Degradation | No data available | | |

9.2 Other Information

No data available

Section 10: Stability and Reactivity

10.1 Reactivity. No dangerous reaction known under conditions of normal use.

10.2 Chemical stability. Stable

10.3 Possibility of hazardous reactions. Hazardous polymerization will not occur.

10.4 Conditions to avoid. Direct sunlight. Excess heat. Avoid freezing.

10.5 Incompatible materials. No data available.

10.6 Hazardous decomposition products. Hazardous decomposition products formed under fire conditions - carbon oxides (COx). No decomposition is expected under normal storage and use conditions.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

| Hazard | Hazard Classification |
|--------------------------------|--|
| Acute toxicity | Based on available data, the classification criteria are not met |
| Skin corrosion/irritation | Based on available data, the classification criteria are not met |
| Serious eye damage/irritation | Based on available data, the classification criteria are not met |
| Respiratory/skin sensitization | Skin Sensitization 1 |
| Germ cell mutagenicity | Based on available data, the classification criteria are not met |
| Carcinogenicity | Based on available data, the classification criteria are not met |
| Reproductive toxicity | Reproductive Toxicity 1B |
| STOT-Single Exposure | Based on available data, the classification criteria are not met |
| STOT-Repeated Exposure | Based on available data, the classification criteria are not met |
| Aspiration | Based on available data, the classification criteria are not met |

Route(s) of entry/exposure: Skin, eye

Potential Health Effects

Inhalation

Acute (Immediate): No specific information available.

Chronic (Delayed): Repeated and prolonged exposure may cause irritation.

Skin

Acute (Immediate): May cause irritation.

Chronic (Delayed): Repeated and prolonged exposure may cause an allergic skin reaction.

Eye

Acute (Immediate): May cause irritation.

Chronic (Delayed): Repeated and prolonged exposure may be harmful.

Ingestion

Acute (Immediate): May cause irritation.

Chronic (Delayed): No specific information available.

Section 12 - Ecological Information

12.1 Toxicity

Pentaerythritol, ethoxylated, esters with acrylic acid, CAS 51728-26-8

Toxicity to fish LC50 - fish - 1.76 mg/l - 96h

Toxicity to algae EC50 - algae - 76.3 mg/l - 72 h

Ethyl 4-dimethylaminobenzoate, CAS 10287-53-3

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 1.9 mg/l - 96 h

Toxicity to daphnia EC50 - Daphnia magna (Water flea) - 4.5 mg/l - 48 h

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in Soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No endocrine disrupting components identified

12.7 Other adverse effects

None noted

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste: Dispose of content in accordance with local, regional, national, and/or international regulations.

Packaging waste: Dispose of container in accordance with local, regional, national, and/or international regulations.

13.2 Other Information

Dispose of wastes in an approved waste disposal facility.

Section 14 - Transport Information

| | 14.1 UN number | 14.2 UN proper shipping name | 14.3 Transport hazard class(es) | 14.4 Packing group | 14.5 Environmental hazards |
|-----------|----------------|------------------------------|---------------------------------|--------------------|----------------------------|
| DOT | NDA | NDA | NDA | NDA | NDA |
| IMO/IMDG | NDA | NDA | NDA | NDA | NDA |
| IATA/ICAO | NDA | NDA | NDA | NDA | NDA |

14.6 Special precautions for user. None specified.

14.7 Transport in bulk according to IMO instruments. Not relevant.

14.8 Other information

DOT Not regulated.

IMO/IMDG Not regulated.

IATA/ICAO Not regulated.

Section 15 - Regulatory Information

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

SARA hazard classifications. Not classified

REACH compliance. No components at a concentration of 0.1% w/w or above are included in the Authorization List or the Candidate List of Substances of Very High Concern for Authorization

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.3 Other information

California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16 - Other Information

Relevant phrases (code & full text)

H317 - May cause an allergic skin reaction.

H360 - May damage fertility or the unborn child.

H402 - Harmful to aquatic life.

H412 - Harmful to aquatic life with long lasting effects.

P203 - Obtain, read and follow all safety instructions before use.

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P273 - Avoid release to the environment.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 - IF ON SKIN: Wash with plenty of soap and water.

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P318 - If exposed or concerned, get medical advice.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P405 - Store locked up.

P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Classification method for mixtures: Calculation method.

Last revision date: 12 January 2023

Preparation date: 29 March 2023

Changes to the current revision: Corrected errors in Section 2 precautionary phrases.

Other information

Approved by: Troy Bergstedt, Director of Chemical Research, (218) 628-2217 ext.142.

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