

Producer

Sigma Ink

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Responsible for Distribution

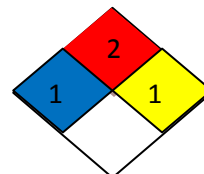
Printex

12113 Kirkham Rd
Poway Ca 92064
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Date: August 5, 2013

1 IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Identification of the product: Viscous liquid.
Trade name: Sigma UV Series Mixing Color Ink
Type of product: Ink
Use: Industrial: screen printing. /pad printing. UV Curable
Product code: Sigma UV -colors and colors according to sample.
Producer/Manufacturer: See address above.
Emergency phone: CHEMTREC (800-424-9300 within US)
Outside US (703-527-3887)



2 HAZARDS IDENTIFICATION

Main hazards Flammable.
Harmful to Aquatic organisms, may cause long-term adverse effect in the aquatic environment.

3 COMPOSITION / INFORMATION ON INGREDIENTS

This product is considered to be hazardous and contains hazardous components.

Substance	name Value(s)	CAS No / EC No / EC Index	Symbol(s)	R-Phrase(s)
Dipentaerytol Pentaacrylate	10 % to 20%	60506812		
Acrylate Oligomer	5% to 10%	Trade Secret		
Photoinitiator	1% to 4%	Trade Secret		
Cumene:	< 0.2 %	98-82-8 / 202-704-5 / 601-024-00-X	Xn N	10-37-51/53-65
Ethyl-3-ethoxypropionate:	20 to 328 %	763-69-9 / 212-112-9 / -----		
Mesitylene:	<= 0.4 %	108-67-8 / 203-604-4 / 601-025-00-5	Xi N	10-37-51/53
1,2,4-trimethylbenzene:	<= 1.2 %	95-63-6 / 202-436-9 / 601-043-00-3	Xn N Xi	10-20-36/37/38-51/53
Cyclohexanone:	4 to 12 %	108-94-1 / 203-631-1 / 606-010-00-7	Xn	10-20
2-methoxy-1-methylethyl acetate:	5 to 15 %	108-65-6 / 203-603-9 / 607-195-00-7	Xi	10-36
VOC(w%): 43				

4 FIRST AID MEASURES

- Inhalation: If not breathing, give artificial respiration.
Remove victim to fresh air and keep warm.
- Skin contact: Remove affected clothing and wash all exposed skin area with mild soap and water,
followed by warm water rinse. Do not use solvents or thinners
- Eye contact: Seek medical advice.
Immediately rinse with clean water for 10-15 minutes.
- Ingestion: If swallowed seek medical advice immediately and show this container or label.
DO NOT INDUCE VOMITING.
General: In case of doubt call a physician.
Never let an unconscious person try to take something.
Place an unconscious patient on his side in a stable position.

5 FIRE-FIGHTING MEASURES

Extinguishing media: Dry chemical.
Carbon dioxide.
Alcohol resistant foam.
Not to be used: Water.
Special exposure hazards: Heavier than air, vapors may travel long distances along ground, ignite and flash back to source.

Protection against fire:
General:

When heated to decomposition, emits dangerous fumes.
Wear self-contained breathing apparatus, rubber boots and thick rubber gloves.
Use water stream to hot cool containers.
Avoid (reject) fire-fighting water to enter environment.

6 ACCIDENTAL RELEASE MEASURES

General precautions: Eliminate every possible source of ignition and ventilate.
In case of insufficient ventilation, wear suitable respiratory equipment.
Personal precautions: Wear suitable (anti-static) protective clothing, gloves and eye/face protection.
Avoid all unnecessary exposure.
Environmental precautions: Prevent entry to sewers and public waters.
Notify authorities if product enters sewers or public waters.
After spillage and/or leakage: Dike for recovery or absorb with appropriate (non-flammable) material.
Collect spills and put it into appropriated container.

7 HANDLING AND STORAGE

General: Avoid all unnecessary exposure.
Use at temperatures between 18 and 30°C.
Precautions in handling and storage: Both local exhaust and good general room ventilation must be provided not only to control exposure but also to prevent formation of flammable mixtures.
Take precautionary measures against static discharges.
Use only non-sparking tools.
Use explosion safe electrical equipments and illumination.
Storage: When using: do not eat, drink or smoke during use.
Close cover tightly after use.
Keep away from food, drink and animal feeding stuffs.
Keep at temperatures between 0 and 40°C.
Storage - away from: Heat.
Open flame.
Sparks.
Storage (PGS 15): Protection level 3. (NL)

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

- Respiratory protection: Local exhaust and general room ventilation are both essential to prevent accumulation of flammable vapor or dust mixtures.
In case of insufficient ventilation, wear suitable respiratory equipment. (Air filter type A, suited for vapors of organic solvents with a boiling point > 65 °C; in case of high concentrations use a fresh air mask).
- Hand protection: PE-disposables or nitril rubber gloves. Do not use natural rubber gloves. Replace gloves immediately when torn or any change in appearance (dimension, color, flexibility etc) is noticed.
- Skin protection: Wear suitable protective clothing.
- Eye protection: Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles.

Occupational Exposure Limits:

Ethyl-3-ethoxypropionate: Max exposure limit (supplier)[ppm]: 50 (TGG 15 min: 100 ppm)
Cyclohexanone: TLV-TWA [ppm]: 25
Cyclohexanone: TLV-STEL [ppm]: 50
Cyclohexanone: Dutch Limit Value TGG-15 min (NL) [mg/m3]: 50
2-methoxy-1-methylethyl acetate: TLV-TWA [mg/m3]: 274 (8 h.)
2-methoxy-1-methylethyl acetate: TLV-TWA [ppm]: 50 (8 h.)
2-methoxy-1-methylethyl acetate: TLV-STEL [mg/m3]: 548 (15 min.)
2-methoxy-1-methylethyl acetate: TLV-STEL [ppm]: 100 (15 min.)
2-methoxy-1-methylethyl acetate: Dutch Limit Value (NL) [ml/m3]: 550
1,2,4-trimethylbenzene: TLV-TWA [mg/m3]: 100
1,2,4-trimethylbenzene: Dutch Limit Value TGG-15 min (NL) [mg/m3]: 200
1,2,4-trimethylbenzene: Dutch Limit Value (NL) [ml/m3]: 100
Mesitylene: TLV-TWA [mg/m3]: 100

Mesitylene: TLV-TWA [ppm]: 25
Mesitylene: Occupational exposure lim [mg/m3]: 100
Mesitylene: Occupational exposure lim TGG-15 min. [mg/m3]: 250
Cumene: TLV-TWA [mg/m3]: 246
Cumene: TLV-TWA [ppm]: 50
Cumene: Dutch Limit Value (NL) [ml/m3]: 100
Cumene: Dutch Limit Value TGG-15 min (NL) [mg/m3]: 250

8 EXPOSURE CONTROLS / PERSONAL PROTECTION (continued)

Cumene: Occupational exposure lim [mg/m3]: 100
Occupational exposure lim TGG-15 min. [mg/m3]: 250

Safety advises: Minimum ventilation (M3 of air) to reach 10 % of LEL using 1 l of product: 97

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Viscous liquid.
Color: Different; according to coding in heading no 1
Odor: Characteristic.
Initial boiling point [°C]: 143
Final boiling point [°C]: 188
Density: 1.02
Vapors pressure [hPa]: 5
Viscosity: >60S 6mm ISO-cup
Flash point [°C]: 43
Auto-ignition temperature [°C]: 319
Explosion limits - lower [%]: 1.0
Explosion limits - upper [%]: 10.8
Non-volatiles (% by volume): 56.3
Others: Composition of the organic solvents: Isopropyl glycol acetate:44%.
Ethyl-3-ethoxy ethyl propionate:28%.
Density of the organic solvents: 0.9 g/cm3 (9.0 lb/gal.)
Percentage of the organic solvents, by vol.: 43.

10 STABILITY AND REACTIVITY

Thermal stability: On exposure to high temperature, may decompose, releasing toxic/flammable vapors.
Hazardous decomposition products: Carbon monoxide.
Chlorides.
Chlorine (Cl).
Hydrochloric acid.
Smoke

Materials to avoid: Strong oxidizers.
Strong alkalis.
Strong acids.

Conditions to avoid: Temperature exceeding (°C): 40.

11 TOXICOLOGICAL INFORMATION

On product: No data available.
On ingredients:

- Ethyl-3-ethoxypropionate: Rat oral LD50 [mg/kg]: 4300
- Ethyl-3-ethoxypropionate: Rabbit dermal LD50 [mg/kg]: > 20
- Ethyl-3-ethoxypropionate: Rat inhalation LC50 [mg/l/4h]: > 1000
- Ethyl-3-ethoxypropionate: Sensitization: No known effects from this product.
- Ethyl-3-ethoxypropionate: Acute effects general: Irritation to eyes.

- Ethyl-3-ethoxypropionate: Acute effects at high concentrations: Dizziness, drowsiness, confusion, headache, feeling of drunkenness and conscience impairment.
- Ethyl-3-ethoxypropionate: Chronic effects: Repeated or prolonged skin contact may cause dermatitis and defatting.
- Cyclohexanone: - Dermal: Absorbed through the skin.
- Cyclohexanone: Rat oral LD50 [mg/kg]: 1620
- Cyclohexanone: Rabbit dermal LD50 [mg/kg]: 948
- Cyclohexanone: Rat inhalation LC50 [mg/l/4h]: 11
- Cyclohexanone: Acute effects general: Irritation to eyes, skin and respiratory tract.
- Cyclohexanone: Chronic effects: Long exposure to low concentrations may lead to dermatitis, bronchitis and conjunctivitis.
- Cyclohexanone: Symptoms on intake of large quantities.: Dizziness, giddiness, headache, vomiting, heart rhythm disorder, distress of the central nervous system and consciousness disorder.
- 2-methoxy-1-methylethyl acetate: Rat oral LD50 [mg/kg]: 8532
- 2-methoxy-1-methylethyl acetate: Rabbit dermal LD50 [mg/kg]: > 5000
- 2-methoxy-1-methylethyl acetate: Mutagenicity: No effects on laboratory animals.
- 2-methoxy-1-methylethyl acetate: Acute effects general: Irritating to eyes.
- 2-methoxy-1-methylethyl acetate: Acute effects at high concentrations: This material or its emissions may cause damage to kidney and liver and/or aggravate existing disorders.
- 2-methoxy-1-methylethyl acetate: Chronic effects: Long term or repeated exposure can result in: redness, dryness, irritation, rash and inflammation of the skin and damage of kidney and liver.
- 1,2,4-trimethylbenzene: Acute effects general: Nausea, vomiting, abdominal problems, irritation of the respiratory tract, risk of respiration pneumonia, risk of lung edema, irritation of the eye fabric.
- 1,2,4-trimethylbenzene: Acute effects at high concentrations: Dizziness, giddiness, headache, vomiting, heart rhythm disorder, distress of the central nervous system and consciousness disorder.
- 1,2,4-trimethylbenzene: Chronic effects: Long term or repeated exposure may cause kidney and liver damage or failure and change of blood composition
- Mesitylene: Acute effects general: Symptoms of exposure to vapors include drowsiness, weakness, headache, dizziness, nausea, vomiting, dimming of vision, abdominal pain, irritation of mucous membranes of nose, eyes and abdomen.
- Mesitylene: Chronic effects: Long term or repeated exposure can result in: redness, dryness, irritation, rash and inflammation of the skin and damage of kidney and liver.
- Cumene: - Dermal: Absorbed through the skin.
- Cumene: Acute effects general: Irritation to eyes, skin and respiratory tract.
- Cumene: Acute effects at high concentrations: Symptoms of exposure to vapors include drowsiness, weakness, headache, dizziness, nausea, vomiting, dimming of vision, abdominal pain, irritation of mucous membranes of nose, eyes and abdomen.

12 ECOLOGICAL INFORMATION

On product:

ABM(The Netherlands):
Cleansing effort B
COD-value [mg/l]:
BOD5-value [mg/l]:
WGK class (Germany):
On ingredients:

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment. {11} Limited danger to aquatic organisms.

No data available.
No data available.
1

- Ethyl-3-ethoxypropionate: Surface water polluting.: Weakly.
- Ethyl-3-ethoxypropionate: Risk of drinking water pollution (ground water).: Yes.
- Ethyl-3-ethoxypropionate: LC50-96 Hour - fish [mg/l]: 65
- Ethyl-3-ethoxypropionate: 48 H-LC50 - Daphnia magna [mg/l]: > 480
- Ethyl-3-ethoxypropionate: IC50 72h Algae [mg/l]: > 115

- Ethyl-3-ethoxypropionate: WGK class (Germany): 1
- Cyclohexanone: Log P octanol / water at 20°C: .81
- Cyclohexanone: Surface water polluting.: Weakly.
- Cyclohexanone: Biodegradation [%]: 87
- Cyclohexanone: LC50-96 Hour - fish [mg/l]: > 500
- Cyclohexanone: 48 H-LC50 - Daphnia magna [mg/l]: > 400
- Cyclohexanone: IC50 72h Algae [mg/l]: 32.9 mg/l.
- Cyclohexanone: ThOD (gO2/g): 2.605
- Cyclohexanone: BOD 5 (gO2/g): 1.232
- Cyclohexanone: WGK class (Germany): 1
- 2-methoxy-1-methylethyl acetate: Log P octanol / water at 20°C: .43
- 2-methoxy-1-methylethyl acetate: Surface water polluting.: Weakly.
- 2-methoxy-1-methylethyl acetate: Aquatic organisms.: Little harmful to fish and aquatic organisms.

12 ECOLOGICAL INFORMATION (continued)

- 2-methoxy-1-methylethyl acetate: Biodegradation [%]: 83
- 2-methoxy-1-methylethyl acetate: 96 Hour-LC50 - Minnow [mg/l]: 161
- 2-methoxy-1-methylethyl acetate: 48 H-CE50 - Daphnia magna [mg/l]: 408
- 2-methoxy-1-methylethyl acetate: Bioaccumulative potential: Not expected.
- 2-methoxy-1-methylethyl acetate: WGK class (Germany): 1
- 1,2,4-trimethylbenzene: Toxic to aquatic organisms.
- 1,2,4-trimethylbenzene: Danger of accumulation in the food chain.
- Mesitylene: Toxic to aquatic organisms.
- Mesitylene: Danger of accumulation in the food chain.
- Cumene: Toxic to aquatic organisms.

13 DISPOSAL CONSIDERATIONS

Disposal: Dispose in a safe manner in accordance with local/national regulations.
Industrial waste number: Eural:200127.

14 TRANSPORT INFORMATION

Hazard Label(s)

Shipping name: UN1210 PRINTING INK / PRINTING INK RELATED MATERIAL, 3, III
- UN No.: 1210
- H.I. nr.: 30
- ADR/RID: Class: 3
Group: III
Transport in accordance with 2.2.3.1.5 ADR (not regulated for containers <450l.)
-Division: F1
- IMO-IMDG: Class 3
Packaging group: III
Transport in accordance with 2.3.2.5 IMDG (not regulated for containers <30 kg.)
Special provisions: 163/223/955.
F-E/S-D.
Special provisions: A3/A72.
- EMS-Nr:
- ICAO/IATA:
Other: Transport in own area: at transport the product packing must always be well closed and stand vertical. Persons who are involved in these activities must be informed in advance how to act in case of a calamity.

15 REGULATORY INFORMATION

Symbol(s): None.
R Phrase(s): R10: Flammable.

S Phrase(s): S3:

Keep in a cool place.

S16: Keep away from sources of ignition - No smoking.

S35: This material and its container must be disposed of in a safe way.

S51: Use only in well-ventilated areas.

S59: Refer to manufacturer/supplier for information on recovery/recycling.

P Phrase(s)

P201-For professional use only.

16 OTHER INFORMATION

Text of R-Phrases in § 3:

R10: Flammable.

R20: Harmful by inhalation.

R36: Irritating to eyes.

R36/37/38: Irritating to eyes, respiratory system and skin.

R37: Irritating to respiratory system.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65: Harmful: may cause lung damage if swallowed.

The contents and format of this MSDS are in accordance with regulation (EC) No 1907/2006.

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