

SAFETY DATA SHEET

according to 1907/2006/EC, Article 31

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THERMOSTAR EPOXY SCREEN INK

Revision 4

Revision date 2015-07-03

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

1.1. Product identifier

Product name	THERMOSTAR EPOXY SCREEN INK
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1.2. Relevant identified uses of the substance or mixture and uses advised against

Product Use	[SU22] Professional uses: Public domain (administration, education, entertainment, services, craftsmen); [SU7] Printing and reproduction of recorded media; [PC18] Ink and toners;
Description	Solvent based temperature sensitive dispersion.

1.3. Details of the supplier of the safety data sheet

Company	Thermographic Measurements Ltd
Address	Riverside Buildings Dock Road Connah's Quay Flintshire CH5 4DS United Kingdom
Web	www.t-m-c.com
Telephone	+44 (0)1244 818348
Fax	+44 (0)1244 818502
Email	sales@t-m-c.com
Email address of the competent person	chrisc@t-m-com

1.4. Emergency telephone number

Emergency telephone number	+44 (0)1244 818348 Hours 09.00 to 17.00
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Intended use

Manufacture of temperature-indicating products and temperature-sensitive decorative effects.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Classification - 1999/45/EC	Xn; R62 Xi; R36/38-43 R10 Symbols: Xn: Harmful.
Main hazards	Flammable. Irritating to eyes and skin. May cause sensitisation by skin contact. Possible risk of impaired fertility.
2.1.2. Classification - EC 1272/2008	Flam. Liq. 3: H226; Skin Irrit. 2: H315; Skin Sens. 1: H317; Eye Dam. 1: H318; Repr. 2: H361f;

2.2. Label elements

Hazard pictograms



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2.2. Label elements

Signal Word	Danger
Hazard Statement	Flam. Liq. 3: H226 - Flammable liquid and vapour. Skin Irrit. 2: H315 - Causes skin irritation. Skin Sens. 1: H317 - May cause an allergic skin reaction. Eye Dam. 1: H318 - Causes serious eye damage. Repr. 2: H361f - Suspected of damaging fertility.
Precautionary Statement: Prevention	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P240 - Ground/bond container and receiving equipment. P241 - Use explosion-proof electrical/ventilating/lighting// equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P264 - Wash thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary Statement: Response	P302+P352 - IF ON SKIN: Wash with plenty of water/ . P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. 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+P313 - IF exposed or concerned: Get medical advice/attention. P310 -Immediately call a POISON CENTER/doctor/ . P321 - Specific treatment (see on this label). P332+P313 - If skin irritation occurs: Get medical advice/attention. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P370+P378 - In case of fire: Use to extinguish.
Precautionary Statement: Storage	P403+P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up.
Precautionary Statement: Disposal	P501 - Dispose of contents/container to

SECTION 3: Composition/information on ingredients

3.2. Mixtures

67/548/EEC / 1999/45/EC

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification	M-factor.
Phenol,4,4'-(1-methylethylidene)bis-,polymer with 2,2'-[[1-methylethylidene)bis(4,1-phenylene oxymethylene)] bis[oxirane] (Bisphenol A copolymer)		25036-25-3			20 - 30%	Xi; R36/38	
Dipropylene Glycol Monomethyl Ether		34590-94-8			10 - 20%	R10	
4,4'-Isopropylidenediphenol	604-030-00-0	80-05-7	201-245-8		1 - 10%	Repr. Cat. 3; R62 Xi; R37-41 R43 R52	
4-Hydroxy-4-methylpentan-2-one	603-016-00-1	123-42-2	204-626-7		1 - 10%	Xi; R36	
1-Methoxy-2-propanol	603-064-00-3	107-98-2	203-539-1		1 - 10%	R10 R67	
Ethylene glycol monobutyl ether	603-014-00-0	111-76-2	203-905-0		1 - 10%	Xn; R20/21/22 Xi; R36/38	
SILICA		7631-86-9	231-545-4		1 - 10%	Xn; R48/20	
Formaldehyde...%	605-001-00-5	50-00-0	200-001-8		0 - 0.5%	Carc. Cat. 3; R40 T; R23/24/25 C; R34 R43	

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3.2. Mixtures

EC 1272/2008

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification	M-factor.
Phenol,4,4'-(1-methylethylidene)bis-,polymer with 2,2'-[[1-methylethylidene)bis(4,1-phenylene oxymethylene)] bis[oxirane] (Bisphenol A copolymer)		25036-25-3			20 - 30%	Skin Irrit. 2: H315; Eye Irrit. 2: H319;	
Dipropylene Glycol Monomethyl Ether		34590-94-8			10 - 20%	Flam. Liq. 3: H226;	
4,4'-Isopropylidenediphenol	604-030-00-0	80-05-7	201-245-8		1 - 10%	Repr. 2: H361f; STOT SE 3: H335; Eye Dam. 1: H318; Skin Sens. 1: H317;	
4-Hydroxy-4-methylpentan-2-one	603-016-00-1	123-42-2	204-626-7		1 - 10%	Eye Irrit. 2: H319;	
1-Methoxy-2-propanol	603-064-00-3	107-98-2	203-539-1		1 - 10%	Flam. Liq. 3: H226; STOT SE 3: H336;	
Ethylene glycol monobutyl ether	603-014-00-0	111-76-2	203-905-0		1 - 10%	Acute Tox. 4: H332; Acute Tox. 4: H312; Acute Tox. 4: H302; Eye Irrit. 2: H319; Skin Irrit. 2: H315;	
SILICA		7631-86-9	231-545-4		1 - 10%	STOT RE 2: H373;	
Formaldehyde...%	605-001-00-5	50-00-0	200-001-8		0 - 0.5%	Carc. 1B: H350; Muta. 2: H341; Acute Tox. 3: H331; Acute Tox. 3: H311; Acute Tox. 3: H301; Skin Corr. 1B: H314; Skin Sens. 1: H317;	

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move the exposed person to fresh air. Seek medical attention.
Eye contact	Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Seek medical attention if irritation or symptoms persist.
Skin contact	Wash off immediately with plenty of soap and water. Remove contaminated clothing. Seek medical attention if irritation or symptoms persist.
Ingestion	Seek medical attention if irritation or symptoms persist. DO NOT INDUCE VOMITING.

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

Inhalation	Irritating to respiratory system. Inhalation may cause coughing, tightness of the chest and irritation of the respiratory system.
Eye contact	Irritating to eyes.
Skin contact	Irritating to skin.
Ingestion	Ingestion may cause nausea and vomiting.

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

Inhalation	Inhalation may cause coughing, tightness of the chest and irritation of the respiratory system. Seek medical attention if irritation or symptoms persist.
Eye contact	Irritating to eyes. Seek medical attention if irritation or symptoms persist.
Skin contact	Irritating to skin. Seek medical attention if irritation or symptoms persist.
Ingestion	Keep the affected person warm and at rest. Seek medical attention if irritation or symptoms persist.

SECTION 5: Firefighting measures

5.1. Extinguishing media

	Carbon oxides.
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5.2. Special hazards arising from the substance or mixture

	Burning produces irritating, toxic and obnoxious fumes.
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5.3. Advice for firefighters

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5.3. Advice for firefighters

Wear suitable respiratory equipment when necessary.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation of the working area. Wear suitable protective equipment.

6.2. Environmental precautions

Do not allow product to enter drains. Prevent further spillage if safe.

6.3. Methods and material for containment and cleaning up

Absorb with inert, absorbent material. Sweep up. Transfer to suitable, labelled containers for disposal. Clean spillage area thoroughly with plenty of water.

6.4. Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with eyes and skin. Ensure adequate ventilation of the working area. Adopt best Manual Handling considerations when handling, carrying and dispensing.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a cool, dry, well ventilated area. Keep containers tightly closed. Store in correctly labelled containers.

7.3. Specific end use(s)

Apply a barrier cream before handling the product. Avoid contact with eyes. Avoid contact with skin. Keep away from sources of ignition - No smoking. Keep container tightly closed. Keep in a cool place. Use in a well ventilated area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Exposure Limit Values

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8.1.1. Exposure Limit Values

1-Methoxy-2-propanol	WEL 8-hr limit ppm: 100 WEL 15 min limit ppm: 150 WEL 8-hr limit mg/m3 total inhalable dust: - WEL 8-hr limit mg/m3 total respirable dust: -	WEL 8-hr limit mg/m3: 375 WEL 15 min limit mg/m3: 560 WEL 15 min limit mg/m3 total inhalable dust: - WEL 15 min limit mg/m3 total respirable dust: -
4,4'-Isopropylidenediphenol	WEL 8-hr limit ppm: - WEL 15 min limit ppm: - WEL 8-hr limit mg/m3 total inhalable dust: - WEL 8-hr limit mg/m3 total respirable dust: -	WEL 8-hr limit mg/m3: 10 WEL 15 min limit mg/m3: - WEL 15 min limit mg/m3 total inhalable dust: - WEL 15 min limit mg/m3 total respirable dust: -
4-Hydroxy-4-methylpentan-2-one	WEL 8-hr limit ppm: 50 WEL 15 min limit ppm: 75 WEL 8-hr limit mg/m3 total inhalable dust: - WEL 8-hr limit mg/m3 total respirable dust: -	WEL 8-hr limit mg/m3: 241 WEL 15 min limit mg/m3: 362 WEL 15 min limit mg/m3 total inhalable dust: - WEL 15 min limit mg/m3 total respirable dust: -
Dipropylene Glycol Monomethyl Ether	WEL 8-hr limit ppm: 50 WEL 15 min limit ppm: - WEL 8-hr limit mg/m3 total inhalable dust: - WEL 8-hr limit mg/m3 total respirable dust: -	WEL 8-hr limit mg/m3: 308 WEL 15 min limit mg/m3: - WEL 15 min limit mg/m3 total inhalable dust: - WEL 15 min limit mg/m3 total respirable dust: -
Ethylene glycol monobutyl ether	WEL 8-hr limit ppm: 25 WEL 15 min limit ppm: 50 WEL 8-hr limit mg/m3 total inhalable dust: - WEL 8-hr limit mg/m3 total respirable dust: -	WEL 8-hr limit mg/m3: 123 WEL 15 min limit mg/m3: 101.2 WEL 15 min limit mg/m3 total inhalable dust: - WEL 15 min limit mg/m3 total respirable dust: -
Formaldehyde...%	WEL 8-hr limit ppm: 2 WEL 15 min limit ppm: 2 WEL 8-hr limit mg/m3 total inhalable dust: - WEL 8-hr limit mg/m3 total respirable dust: -	WEL 8-hr limit mg/m3: 2.5 WEL 15 min limit mg/m3: 2.5 WEL 15 min limit mg/m3 total inhalable dust: - WEL 15 min limit mg/m3 total respirable dust: -

8.2. Exposure controls

8.2.1. Appropriate engineering controls	Ensure adequate ventilation of the working area.
8.2.2. Individual protection measures	Wear chemical protective clothing.
Eye / face protection	Approved safety goggles.
Skin protection - Handprotection	Chemical resistant gloves (PVC).
Respiratory protection	Wear: Suitable respiratory equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid
Colour	Various colours according to type.
Odour	Characteristic
Flash point	52

SECTION 10: Stability and reactivity

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10.1. Reactivity

	Stable.
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10.2. Chemical stability

	Stable under normal conditions.
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10.3. Possibility of hazardous reactions

	No Significant Hazard.
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10.4. Conditions to avoid

	Avoid sparks, flames, heat and sources of ignition.
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10.5. Incompatible materials

	No Significant Hazard.
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10.6. Hazardous decomposition products

	Burning produces obnoxious and irritating fumes.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	May cause sensitisation by skin contact.
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11.1.4. Toxicological Information

1-Methoxy-2-propanol	Inhalation Rat LC50/5H h: 10000 ppm Oral Mouse LD50: 11700 mg/kg	Oral Rat LD50: 6600 mg/kg Dermal Rabbit LD50: 13 gm/kg
4,4'-Isopropylidenediphenol	Oral Rat LD50: 4240 mg/kg Dermal Rabbit LD50: 3 mL/kg	Oral Mouse LD50: 2500 mg/kg
4-Hydroxy-4-methylpentan-2-one	Oral Rat LD50: 4000 mg/kg Dermal Rabbit LD50: 13500 mg/kg	Oral Mouse LD50: 3000 mg/kg
Dipropylene Glycol Monomethyl Ether	Oral Rat LD50: 5.5 mL/kg	Dermal Rabbit LD50: 10 mL/kg
Ethylene glycol monobutyl ether	Inhalation Rat LC50/7H h: 2900 mg/m ³ Oral Mouse LD50: 1167 mg/kg Dermal Rabbit LD50: 220 mg/kg	Oral Rat LD50: 917 mg/kg Inhalation Mouse LC50/7H h: 3380 mg/m ³ Dermal Guinea Pig LD50: 230 uL/kg
Formaldehyde...%	Inhalation Rat LC50/2H h: 250 ppm Oral Mouse LD50: 500 mg/kg Dermal Rabbit LD50: 270 mg/kg	Oral Rat LD50: 500 mg/kg Inhalation Mouse LC50/2H h: 505 mg/m ³

SECTION 12: Ecological information

12.1. Toxicity

4,4'-Isopropylidenediphenol	Green algae EC50/96h: 3.1 Fathead minnows LC50/96h: 4.6	Daphnia LC50/48h: 10.2
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Further information

	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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SECTION 13: Disposal considerations

General information

	Dispose of in compliance with all local and national regulations.
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SECTION 14: Transport information

Hazard pictograms

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Hazard pictograms



14.1. UN number

UN1210

14.2. UN proper shipping name

PRINTING INK

14.3. Transport hazard class(es)

ADR/RID	3
Subsidiary risk	-
IMDG	3
Subsidiary risk	-
IATA	3
Subsidiary risk	-

14.4. Packing group

Packing group III

14.5. Environmental hazards

Environmental hazards	No
Marine pollutant	No

ADR/RID

Hazard ID	33
Tunnel Category	(D/E)

IMDG

EmS Code F-E S-D

IATA

Packing Instruction (Cargo)	366
Maximum quantity	220 L
Packing Instruction (Passenger)	355
Maximum quantity	60 L

Further information

The product is not classified as dangerous for carriage.

SECTION 15: Regulatory information

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

Regulations	<p>This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.</p> <p>COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.</p>
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Further information

For this product a chemical safety assessment was not carried out.

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SECTION 16: Other information

Other information

Revision	<p>This document differs from the previous version in the following areas:.</p> <ul style="list-style-type: none"> 1 - Description. 1 - Product Use. 2 - 2.1.2. Classification - EC 1272/2008. 2 - Hazard pictograms. 2 - Signal Word. 2 - Precautionary Statement: Prevention. 2 - Precautionary Statement: Response. 2 - Precautionary Statement: Storage. 2 - Precautionary Statement: Disposal. 7 - 7.3. Specific end use(s). 10 - 10.4. Conditions to avoid. 12 - 12.1. Toxicity.
Text of risk phrases in Section 3	<ul style="list-style-type: none"> R10 - Flammable R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed. R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed. R34 - Causes burns. R36/38 - Irritating to eyes and skin. R36 - Irritating to eyes. R37 - Irritating to respiratory system. R40 - Limited evidence of a carcinogenic effect. R41 - Risk of serious damage to eyes. R43 - May cause sensitisation by skin contact. R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation. R52 - Harmful to aquatic organisms. R62 - Possible risk of impaired fertility. R67 - Vapours may cause drowsiness and dizziness.
Text of Hazard Statements in Section 3	<ul style="list-style-type: none"> Skin Irrit. 2: H315 - Causes skin irritation. Eye Irrit. 2: H319 - Causes serious eye irritation. Flam. Liq. 3: H226 - Flammable liquid and vapour. Skin Sens. 1: H317 - May cause an allergic skin reaction. Eye Dam. 1: H318 - Causes serious eye damage. STOT SE 3: H335 - May cause respiratory irritation. Repr. 2: H361f - Suspected of damaging fertility. STOT SE 3: H336 - May cause drowsiness or dizziness. Acute Tox. 4: H302 - Harmful if swallowed. Acute Tox. 4: H312 - Harmful in contact with skin. Acute Tox. 4: H332 - Harmful if inhaled. STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure .
Further information	
HMIS LABELLING	<p>The information supplied in this Safety Data Sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication however no guarantee is made to its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process.</p> <hr/> <p>All components are TSCA compliant.</p> <hr/> <p>HEALTH 1, FLAMMABILITY 0, PERSONAL PROTECTION : C. PHYSICAL HAZARD 0.</p>