Safety Data Sheet

Document group:	34-2446-2	**Version number:**	9.00
Revision date:	10/10/2023	**Supersedes date:**	08/08/2023

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006), as amended for GB.

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

1.1. Product identifier
3M Piezo Ink Jet Ink 8805-UV, Black

Product Identification Numbers
75-0302-4891-0

7100050700

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

Identified uses
Professional

1.3. Details of the supplier of the safety data sheet

Address: 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.
Telephone: +44 (0)1344 858 000
E Mail: tox.uk@mmm.com
Website: www.3M.com/uk

1.4. Emergency telephone number
+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.
A similar mixture has been tested for skin corrosion/irritation and the test results are reflected in the assigned classification.

CLASSIFICATION:
Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Carcinogenicity, Category 1B - Carc. 1B; H350
Reproductive Toxicity, Category 1B - Repr. 1B; H360FD
Specific Target Organ Toxicity-Single Exposure, Category 3 - STOT SE 3; H335
Hazardous to the Aquatic Environment (Acute), Category 1 - Aquatic Acute 1; H400
Hazardous to the Aquatic Environment (Chronic), Category 1 - Aquatic Chronic 1; H410

For full text of H phrases, see Section 16.

2.2. Label elements
The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

SIGNAL WORD
DANGER.

Symbols
GHS05 (Corrosion) |GHS07 (Exclamation mark) |GHS08 (Health Hazard) |GHS09 (Environment) |

Pictograms

Ingredient	CAS Nbr	EC No.	% by Wt
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	227-561-6	5 - 30
isooctyl acrylate	29590-42-9	249-707-8	10 - 30
Tetrahydrofurfuryl acrylate	2399-48-6	219-268-7	15 - 25
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3		7 - 13
hexamethylene diacrylate	13048-33-4	235-921-9	< 10
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	278-355-8	3 - 7
Benzophenone	119-61-9	204-337-6	3 - 7

HAZARD STATEMENTS:

H315	Causes skin irritation.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H350	May cause cancer.
H360FD	May damage fertility. May damage the unborn child.
H335	May cause respiratory irritation.
H410	Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P261A	Avoid breathing vapours.
P273	Avoid release to the environment.

P280I	Wear protective gloves, eye/face protection, and respiratory protection.

Response:

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 CENTRE or doctor/physician.

SUPPLEMENTAL INFORMATION:

Supplemental Precautionary Statements:
Restricted to professional users.

22% of the mixture consists of components of unknown acute oral toxicity.

Contains 25% of components with unknown hazards to the aquatic environment.

2.3. Other hazards

None known.
This material does not contain any substances that are assessed to be a PBT or vPvB

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP], as amended for GB
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	(CAS-No.) 72162-39-1	10 - 30	Skin Irrit. 2, H315 Eye Irrit. 2, H319
isooctyl acrylate	(CAS-No.) 29590-42-9 (EC-No.) 249-707-8	10 - 30	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1 Skin Sens. 1B, H317
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	(CAS-No.) 5888-33-5 (EC-No.) 227-561-6	5 - 30	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
Tetrahydrofurfuryl acrylate	(CAS-No.) 2399-48-6 (EC-No.) 219-268-7	15 - 25	Aquatic Chronic 2, H411 EUH071 Acute Tox. 4, H302 Skin Corr. 1C, H314 Skin Sens. 1B, H317 Repr. 1B, H360Df
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	(CAS-No.) 67906-98-3	7 - 13	Skin Irrit. 2, H315 Eye Irrit. 2, H319

			Skin Sens. 1, H317
hexamethylene diacrylate	(CAS-No.) 13048-33-4 (EC-No.) 235-921-9	< 10	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Nota D Aquatic Acute 1, H400,M=1 Aquatic Chronic 2, H411
Benzophenone	(CAS-No.) 119-61-9 (EC-No.) 204-337-6	3 - 7	Acute Tox. 4, H302 STOT RE 2, H373 Aquatic Chronic 3, H412
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	(CAS-No.) 75980-60-8 (EC-No.) 278-355-8	3 - 7	Skin Sens. 1B, H317 Repr. 1B, H360F Aquatic Chronic 2, H411
Carbon black	(CAS-No.) 1333-86-4 (EC-No.) 215-609-9	1 - 5	Substance with a national occupational exposure limit
Polymer	Trade Secret	1 - 5	Substance not classified as hazardous
CAMPHENE	(CAS-No.) 79-92-5 (EC-No.) 201-234-8	< 0.2	Flam. Sol. 2, H228 Eye Irrit. 2, H319 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1

Please see section 16 for the full text of any H statements referred to in this section

Specific Concentration Limits

Ingredient	Identifier(s)	Specific Concentration Limits
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	(CAS-No.) 5888-33-5 (EC-No.) 227-561-6	(C >= 10%) STOT SE 3, H335
isooctyl acrylate	(CAS-No.) 29590-42-9 (EC-No.) 249-707-8	(C >= 10%) STOT SE 3, H335

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

Skin contact
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye contact
Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If swallowed

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed
The most important symptoms and effects based on the GB CLP classification include:
Irritating to the respiratory tract (coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain). Irritation to the skin (localized redness, swelling, itching, and dryness). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

4.3. Indication of any immediate medical attention and special treatment required
Not applicable.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.

5.3. Advice for fire-fighters
Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. Seal the container. Dispose of collected material as soon as possible.

6.4. Reference to other sections
Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Store away from oxidising agents.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Carbon black	1333-86-4	UK HSC	TWA: 3.5 mg/m³; STEL: 7 mg/m³	
Tetrahydrofurfuryl acrylate	2399-48-6	Manufacturer determined	TWA:0.1 ppm(0.64 mg/m3);STEL:0.3 ppm(1.91 mg/m3)	Dermal Sensitizer

UK HSC : UK Health and Safety Commission
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

Biological limit values
No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Full face shield.
Indirect vented goggles.

Applicable Norms/Standards
Use eye/face protection conforming to EN 166

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the

results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Polymer laminate	No data available	No data available

Applicable Norms/Standards
Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates, including oily mists

For questions about suitability for a specific application, consult with your respirator manufacturer.

Applicable Norms/Standards
Use a respirator conforming to EN 140: filter types A & P

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Liquid.
Colour	Black
Odor	Acrylate
Odour threshold	*No data available.*
Melting point/freezing point	*Not applicable.*
Boiling point/boiling range	> 93.3 ºC
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Flash point	> 93.3 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-soluble (in water)*
Kinematic Viscosity	*No data available.*
Water solubility	Negligible
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	< 1,333.2 Pa [@ 20 ºC]
Density	1.04 g/ml
Relative density	1.04 [*Ref Std:*WATER=1]
Relative Vapour Density	> 1 [*Ref Std:*AIR=1]

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*No data available.*
Percent volatile	*No data available.*

SECTION 10: Stability and reactivity

10.1 Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation may occur. (Upon depletion of inhibitor or exposure to heat)

10.4 Conditions to avoid
Light.

10.5 Incompatible materials
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not agree with the material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from 3M assessments.

11.1. Information on hazard classes as defined in the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain.

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below).

Skin contact
Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. May cause additional health effects (see below).

Eye contact
Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion
May be harmful if swallowed.
Gastrointestinal corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause additional health effects (see below).

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:
Kidney/Bladder effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination. Dermal effects: Signs/symptoms may include redness, itching, acne, or bumps on the skin.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Ingestion	Rat	LD50 4,350 mg/kg
Tetrahydrofurfuryl acrylate	Ingestion	Rat	LD50 882 mg/kg
isooctyl acrylate	Dermal	Rabbit	LD50 > 2,000 mg/kg
isooctyl acrylate	Ingestion	Rat	LD50 > 5,000 mg/kg
hexamethylene diacrylate	Dermal	Rabbit	LD50 3,636 mg/kg
hexamethylene diacrylate	Ingestion	Rat	LD50 > 5,000 mg/kg
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Benzophenone	Dermal	Rabbit	LD50 3,535 mg/kg
Benzophenone	Ingestion	Rat	LD50 1,900 mg/kg
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg
Polymer	Ingestion	similar compounds	LD50 > 5,000 mg/kg
Polymer	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
CAMPHENE	Dermal	Rabbit	LD50 > 2,500 mg/kg
CAMPHENE	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product	Professional judgemen	Irritant

	t	
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Rabbit	Minimal irritation
Tetrahydrofurfuryl acrylate	Rabbit	Corrosive
isooctyl acrylate	In vitro data	No significant irritation
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	similar compounds	Irritant
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar compounds	Irritant
hexamethylene diacrylate	Rabbit	Irritant
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Rabbit	No significant irritation
Benzophenone	Rabbit	No significant irritation
Carbon black	Rabbit	No significant irritation
Polymer	similar compounds	No significant irritation
CAMPHENE	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Rabbit	Mild irritant
Tetrahydrofurfuryl acrylate	Rabbit	Corrosive
isooctyl acrylate	similar health hazards	Mild irritant
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	similar compounds	Severe irritant
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar compounds	Severe irritant
hexamethylene diacrylate	Rabbit	Moderate irritant
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Rabbit	No significant irritation
Benzophenone	Rabbit	Mild irritant
Carbon black	Rabbit	No significant irritation
Polymer	similar compounds	No significant irritation
CAMPHENE	Rabbit	Moderate irritant

Skin Sensitisation

Name	Species	Value
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Human and animal	Sensitising
Tetrahydrofurfuryl acrylate	Professional judgement	Sensitising
isooctyl acrylate	Mouse	Sensitising
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar compounds	Sensitising
hexamethylene diacrylate	Guinea pig	Sensitising
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Mouse	Sensitising
Benzophenone	Guinea pig	Not classified

Respiratory Sensitisation

For the component/components, either no data is currently available or the data is not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	In Vitro	Not mutagenic
Tetrahydrofurfuryl acrylate	In Vitro	Not mutagenic
isooctyl acrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
hexamethylene diacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	In Vitro	Not mutagenic
Benzophenone	In Vitro	Not mutagenic
Benzophenone	In vivo	Not mutagenic
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification
CAMPHENE	In Vitro	Not mutagenic
CAMPHENE	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
isooctyl acrylate	Dermal	Mouse	Not carcinogenic
hexamethylene diacrylate	Dermal	Mouse	Not carcinogenic
Benzophenone	Dermal	Multiple animal species	Not carcinogenic
Benzophenone	Ingestion	Multiple animal species	Carcinogenic.
Carbon black	Dermal	Mouse	Not carcinogenic
Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	31 days
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	premating into lactation
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	premating into lactation
Tetrahydrofurfuryl acrylate	Ingestion	Toxic to female reproduction	Rat	NOAEL 50 mg/kg/day	premating into lactation
Tetrahydrofurfuryl acrylate	Dermal	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	90 days
Tetrahydrofurfuryl acrylate	Ingestion	Toxic to male reproduction	Rat	NOAEL 35 mg/kg/day	90 days
Tetrahydrofurfuryl acrylate	Inhalation	Toxic to male reproduction	Rat	NOAEL 0.6 mg/l	90 days
Tetrahydrofurfuryl acrylate	Ingestion	Toxic to development	Rat	NOAEL 50 mg/kg/day	premating into lactation
isooctyl acrylate	Dermal	Not classified for female reproduction	Rat	NOAEL 57 mg/kg/day	premating & during gestation
isooctyl acrylate	Dermal	Not classified for male reproduction	Rat	NOAEL 57 mg/kg/day	premating & during gestation
isooctyl acrylate	Dermal	Not classified for development	Rat	NOAEL 57 mg/kg/day	premating & during gestation

isooctyl acrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during organogenesis
hexamethylene diacrylate	Not specified.	Not classified for development	Rat	NOAEL 750 mg/kg/day	during organogenesis
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Ingestion	Not classified for development	Rat	NOAEL 150 mg/kg/day	during gestation
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Ingestion	Toxic to female reproduction	Rat	NOAEL 200 mg/kg/day	premating into lactation
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Ingestion	Toxic to male reproduction	Rat	NOAEL 60 mg/kg/day	85 days
Benzophenone	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	2 generation
Benzophenone	Ingestion	Not classified for male reproduction	Rat	NOAEL 80 mg/kg/day	2 generation
Benzophenone	Ingestion	Not classified for development	Rabbit	NOAEL 25 mg/kg/day	during gestation
CAMPHENE	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Tetrahydrofurfuryl acrylate	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
isooctyl acrylate	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	occupational exposure
isooctyl acrylate	Ingestion	central nervous system depression	Not classified	Rat	NOAEL 5,000 mg/kg	
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
hexamethylene diacrylate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
CAMPHENE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	Ingestion	gastrointestinal tract | immune system | kidney and/or bladder | heart | endocrine system | hematopoietic system | liver | nervous system | respiratory system	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
isooctyl acrylate	Dermal	heart | endocrine system | hematopoietic	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation

		system | liver | immune system | nervous system | kidney and/or bladder | respiratory system				
isooctyl acrylate	Ingestion	endocrine system | liver | kidney and/or bladder | heart | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | eyes | respiratory system | vascular system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
hexamethylene diacrylate	Dermal	skin	May cause damage to organs though prolonged or repeated exposure	Mouse	LOAEL 70 mg/kg/day	80 weeks
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Ingestion	skin | blood | liver | kidney and/or bladder | nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
Benzophenone	Ingestion	kidney and/or bladder	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 75 mg/kg/day	14 weeks
Benzophenone	Ingestion	heart | hematopoietic system | liver | immune system | endocrine system | bone, teeth, nails, and/or hair | nervous system | eyes | respiratory system	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
Carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
CAMPHENE	Ingestion	liver | kidney and/or bladder | hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

Aspiration Hazard
For the component/components, either no data is currently available or the data is not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

11.2. Information on other hazards

This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

SECTION 12: Ecological information

The information below may not agree with the material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	72162-39-1	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	Green algae	Experimental	72 hours	ErC50	1.98 mg/l
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	Zebra Fish	Experimental	96 hours	LC50	0.704 mg/l
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	Green algae	Experimental	72 hours	NOEC	0.405 mg/l
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	Water flea	Experimental	21 days	NOEC	0.092 mg/l
isooctyl acrylate	29590-42-9	Green algae	Estimated	72 hours	EC50	0.535 mg/l
isooctyl acrylate	29590-42-9	Fathead minnow	Experimental	96 hours	LC50	0.67 mg/l
isooctyl acrylate	29590-42-9	Water flea	Experimental	48 hours	EC50	0.4 mg/l
isooctyl acrylate	29590-42-9	Water flea	Experimental	21 days	NOEC	0.065 mg/l
isooctyl acrylate	29590-42-9	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Tetrahydrofurfuryl acrylate	2399-48-6	Activated sludge	Experimental	3 hours	EC50	263.7 mg/l
Tetrahydrofurfuryl acrylate	2399-48-6	Green algae	Experimental	72 hours	EC50	3.92 mg/l
Tetrahydrofurfuryl acrylate	2399-48-6	Water flea	Experimental	48 hours	EC50	37.7 mg/l
Tetrahydrofurfuryl acrylate	2399-48-6	Zebra Fish	Experimental	96 hours	LC50	7.32 mg/l
Tetrahydrofurfuryl acrylate	2399-48-6	Green algae	Experimental	72 hours	EC10	2.48 mg/l
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
hexamethylene diacrylate	13048-33-4	Green algae	Experimental	72 hours	EC50	2.33 mg/l
hexamethylene diacrylate	13048-33-4	Medaka	Experimental	96 hours	LC50	0.38 mg/l
hexamethylene diacrylate	13048-33-4	Water flea	Experimental	48 hours	EC50	2.7 mg/l
hexamethylene diacrylate	13048-33-4	Green algae	Experimental	72 hours	NOEC	0.9 mg/l
hexamethylene diacrylate	13048-33-4	Medaka	Experimental	39 days	NOEC	0.072 mg/l
hexamethylene diacrylate	13048-33-4	Water flea	Experimental	21 days	NOEC	0.14 mg/l
hexamethylene diacrylate	13048-33-4	Activated sludge	Experimental	30 minutes	EC50	270 mg/l
diphenyl(2,4,6-trimethylbenzoyl)p	75980-60-8	Activated sludge	Experimental	3 hours	EC20	>1,000 mg/l

hosphine oxide						
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	Common Carp	Experimental	96 hours	LC50	1.4 mg/l
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	Green algae	Experimental	72 hours	EC50	>2.01 mg/l
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	Water flea	Experimental	48 hours	EC50	3.53 mg/l
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	Green algae	Experimental	72 hours	EC10	1.56 mg/l
Benzophenone	119-61-9	Fathead minnow	Experimental	96 hours	LC50	10.89 mg/l
Benzophenone	119-61-9	Green algae	Experimental	72 hours	EC50	3.5 mg/l
Benzophenone	119-61-9	Water flea	Experimental	48 hours	EC50	6.8 mg/l
Benzophenone	119-61-9	Fathead minnow	Experimental	7 days	NOEC	2.1 mg/l
Benzophenone	119-61-9	Green algae	Experimental	72 hours	NOEC	1 mg/l
Benzophenone	119-61-9	Water flea	Experimental	21 days	NOEC	0.2 mg/l
Carbon black	1333-86-4	Activated sludge	Experimental	3 hours	EC50	>=100 mg/l
Carbon black	1333-86-4	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Polymer	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
CAMPHENE	79-92-5	Activated sludge	Experimental	3 hours	EC10	490.3 mg/l
CAMPHENE	79-92-5	Green algae	Experimental	72 hours	EC50	1.75 mg/l
CAMPHENE	79-92-5	Sheepshead Minnow	Experimental	96 hours	LC50	1.9 mg/l
CAMPHENE	79-92-5	Water flea	Experimental	48 hours	EC50	0.72 mg/l
CAMPHENE	79-92-5	Zebra Fish	Experimental	96 hours	LC50	0.72 mg/l
CAMPHENE	79-92-5	Green algae	Experimental	72 hours	NOEC	0.07 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	72162-39-1	Data not availbl-insufficient	N/A	N/A	N/A	N/A
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	Experimental Biodegradation	28 days	CO2 evolution	57 %CO2 evolution/THCO2 evolution	OECD 310 CO2 Headspace
isooctyl acrylate	29590-42-9	Experimental Biodegradation	28 days	BOD	93 %BOD/ThOD	OECD 301D - Closed bottle test
Tetrahydrofurfuryl	2399-48-6	Experimental	28 days	BOD	77.7 %BOD/ThOD	OECD 301F - Manometric

acrylate		Biodegradation				respirometry
Tetrahydrofurfuryl acrylate	2399-48-6	Experimental Bioconcentration		Log Kow	0.81	
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
hexamethylene diacrylate	13048-33-4	Experimental Biodegradation	28 days	CO2 evolution	60-70 %CO2 evolution/THCO2 evolution	ISO 14593 Inorg C Headspace
hexamethylene diacrylate	13048-33-4	Estimated Photolysis		Photolytic half-life (in air)	1 days (t 1/2)	Episuite™
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	Experimental Biodegradation	28 days	BOD	≤10 %BOD/ThOD	OECD 301F - Manometric respirometry
Benzophenone	119-61-9	Experimental Biodegradation	28 days	BOD	66-84 %BOD/ThOD	OECD 301F - Manometric respirometry
Carbon black	1333-86-4	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Polymer	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
CAMPHENE	79-92-5	Experimental Biodegradation	28 days	BOD	2 %BOD/ThOD	OECD 301C - MITI test (I)
CAMPHENE	79-92-5	Experimental Photolysis		Photolytic half-life (in air)	7.2 hours (t 1/2)	

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	72162-39-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	Analogous Compound BCF - Fish	56 hours	Bioaccumulation factor	37	OECD305-Bioconcentration
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	Experimental Bioconcentration		Log Kow	4.52	OECD 117 log Kow HPLC method
isooctyl acrylate	29590-42-9	Estimated Bioconcentration		Bioaccumulation factor	120-940	Catalogic™
isooctyl acrylate	29590-42-9	Experimental Bioconcentration		Log Kow	4.6	
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
hexamethylene diacrylate	13048-33-4	Experimental Bioconcentration		Log Kow	2.81	
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	Experimental BCF - Fish	56 days	Bioaccumulation factor	≤40	
Benzophenone	119-61-9	Experimental BCF - Fish	56 days	Bioaccumulation factor	<12	
Carbon black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polymer	Trade Secret	Data not available or insufficient for	N/A	N/A	N/A	N/A

		classification				
CAMPHENE	79-92-5	Experimental BCF - Fish	56 days	Bioaccumulation factor	606-1290	OECD305-Bioconcentration

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	Analogous Compound Mobility in Soil	Koc	5,100 l/kg	OECD 121 Estim. of Koc by HPLC
isooctyl acrylate	29590-42-9	Experimental Mobility in Soil	Koc	1,500 l/kg	
hexamethylene diacrylate	13048-33-4	Estimated Mobility in Soil	Koc	220 l/kg	Episuite™

12.5. Results of the PBT and vPvB assessment

This material does not contain any substances that are assessed to be a PBT or vPvB

12.6. Other adverse effects

This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)
080312* Waste ink containing dangerous substances

SECTION 14: Transportation information

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number	UN3082	UN3082	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(TETRAHYDROFURFURYL ACRYLATE; ISOOCTYL ACRYLATE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(TETRAHYDROFURFURYL ACRYLATE; ISOOCTYL ACRYLATE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(TETRAHYDROFURFURYL ACRYLATE; ISOOCTYL ACRYLATE)

14.3 Transport hazard class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	Environmentally Hazardous	Not applicable	Marine Pollutant
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	M6	Not applicable.	Not applicable.
IMDG Segregation Code	Not applicable.	Not applicable.	NONE

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

SECTION 15: Regulatory information

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

Carcinogenicity

Ingredient	CAS Nbr	Classification	Regulation
Benzophenone	119-61-9	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Benzophenone	119-61-9	Carc. 1B	Annex VI-18th ATP according to the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Global inventory status

Contact 3M for more information. The components of this product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

COMAH Regulation, SI 2015/483
Seveso hazard categories, Annex 1, Part 1

Hazard Categories	Qualifying quantity (tonnes) for the application of	
	Lower-tier requirements	Upper-tier requirements
E1 Hazardous to the Aquatic environment	100	200

Seveso named dangerous substances, Annex 1, Part 2

Dangerous Substances	Identifier(s)	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	200	500
isooctyl acrylate	29590-42-9	100	200

Regulation (EU) No 649/2012, as amended for GB
No chemicals listed

15.2. Chemical Safety Assessment
A chemical safety assessment has not been carried out for this substance/mixture in accordance with Regulation (EC) No 1907/2006, as amended for GB.

SECTION 16: Other information

List of relevant H statements

EUH071	Corrosive to the respiratory tract.
H228	Flammable solid.
H302	Harmful if swallowed.
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 serious eye irritation.
H335	May cause respiratory irritation.
H350	May cause cancer.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H360F	May damage fertility.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Revision information:
GB Section 15: Carcinogenicity information information was modified.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the

product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

3M SDSs for Great Britain are available at www.3M.com/uk
For Northern Ireland documents, please contact your 3M representative to obtain a copy.