SAFETY DATA SHEET
MIRAMER M1142
Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name MIRAMER M1142

Chemical name Biphenyl-2-ol ethoxylated esters with acrylic acid

Synonyms; trade names OPPEA / o-Phenylphenol EO Acrylate

REACH registration number 01-2120752385-51-XXXX

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

Identified uses Resins of Coating.

1.3. Details of the supplier of the safety data sheet

Supplier
Miwon Europe GmbH
Zeppelinstraße 26
D-47638 Straelen
Germany
Tel: + 49-(0)2834-944671-0
Fax: +49-(0)2834- 944671-99
sales.eu@mwc.co.kr / www.miramer.com

Manufacturer
Miwon Specialty Chemical Co., Ltd.
167, Wanjusandan 1-ro, Bongdong-eup,
Wanju-gun, Jeollabuk-do
Korea
Tel: +82-63-260-1500
Fax: +82-63-261-6734
miramer@mwc.co.kr / www.miramer.com

1.4. Emergency telephone number

Emergency telephone +49-(0)2834- 944671-0, This phone number is available only during office hours.

National emergency telephone number +49 551 19240 GIZ-Nord, Goettingen, Germany

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Sens. 1 - H317

Environmental hazards Aquatic Chronic 2 - H411

2.2. Label elements

MIRAMER M1142

Pictogram

Signal word	Warning
Hazard statements	H317 May cause an allergic skin reaction. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P261 Avoid breathing vapour/ spray. P273 Avoid release to the environment. P302+P352 IF ON SKIN: Wash with plenty of water. P321 Specific treatment (see medical advice on this label). P362+P364 Take off contaminated clothing and wash it before reuse. P501 Dispose of contents/ container in accordance with national regulations.
Contains	OPPEA / o-Phenylphenol EO Acrylate
Supplementary precautionary statements	P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P391 Collect spillage.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

OPPEA / o-Phenylphenol EO Acrylate **>99%**

CAS number: 72009-86-0 EC number: 500-247-9 REACH registration number: 01-2120752385-51-XXXX

Classification
Skin Sens. 1A - H317
Aquatic Chronic 2 - H411

Butylated hydroxytoluene **<0.2%**

CAS number: 128-37-0 EC number: 204-881-4

M factor (Chronic) = 1

Classification
Aquatic Chronic 1 - H410

MIRAMER M1142

CYCLOHEXANE		**<0.10%**
CAS number: 110-82-7	EC number: 203-806-2	
M factor (Acute) = 1	M factor (Chronic) = 1	

Classification
Flam. Liq. 2 - H225
Skin Irrit. 2 - H315
STOT SE 3 - H336
Asp. Tox. 1 - H304
Aquatic Acute 1 - H400
Aquatic Chronic 1 - H410

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Get medical attention if any discomfort continues.

Ingestion Rinse mouth thoroughly with water. Give plenty of water to drink. Keep affected person under observation. Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.

Eye contact Continue to rinse for at least 15 minutes and get medical attention.

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

Skin contact May cause an allergic skin reaction.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Oxides of carbon.

5.3. Advice for firefighters

Protective actions during firefighting No action shall be taken without appropriate training or involving any personal risk.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Use suitable respiratory protection if ventilation is inadequate.

6.2. Environmental precautions

Environmental precautions Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up No smoking, sparks, flames or other sources of ignition near spillage. Absorb spillage with sand or other inert absorbent. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Collect and dispose of spillage as indicated in Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid contact with skin and eyes. Wash contaminated skin thoroughly after handling. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Keep away from heat, sparks and open flame. Use mechanical ventilation if there is a risk of handling causing formation of airborne dust. Handle and open container with care. Wear suitable protective equipment for prolonged exposure and/or high concentrations of vapours, spray or mist.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry and cool place. Store at temperatures between 5°C and 30°C. Store at temperatures not exceeding 40°C. Protect from freezing and direct sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

Butylated hydroxytoluene

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³

CYCLOHEXANE

Long-term exposure limit (8-hour TWA): WEL 100 ppm 350 mg/m³
Short-term exposure limit (15-minute): WEL 300 ppm 1050 mg/m³
WEL = Workplace Exposure Limit

8.2. Exposure controls

Protective equipment

Appropriate engineering controls	Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles. Wear tight-fitting, chemical splash goggles or face shield.
Hand protection	Wear protective gloves. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber.
Other skin and body protection	Avoid contact with skin. Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures	Wash contaminated skin thoroughly after handling. Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Take off immediately all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a full facepiece respirator fitted with the following cartridge: Organic vapour filter. High-efficiency particulate filter.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Odour	Characteristic.
pH	Not determined.
Initial boiling point and range	204°C @ 1.3 kPa
Flash point	165°C
Evaporation rate	Not determined.
Upper/lower flammability or explosive limits	Not determined.
Vapour pressure	0.00052 Pa @ 25°C
Vapour density	Not determined.
Relative density	1.13 @ 25°C
Solubility(ies)	30 mg/l water @ 20°C
Partition coefficient	log Kow: 3.68
Auto-ignition temperature	>500°C
Viscosity	110~160 cP @ 25°C

9.2. Other information

Molecular weight	268

MIRAMER M1142

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions May polymerise.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition. Avoid exposure to high temperatures or direct sunlight. Avoid contact with strong oxidising agents.

10.5. Incompatible materials

Materials to avoid Avoid contact with radical forming initiators, peroxides, strong alkalies or reactive metals to prevent exothermic polymerization.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information on ingredients.

OPPEA / o-Phenylphenol EO Acrylate

Acute toxicity - oral

Notes (oral LD_{50}) LD_{50} 2000~5000 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD_{50}) LD0 2000 mg/kg, Dermal, Rat

Acute toxicity - inhalation

Notes (inhalation LC_{50}) No information available.

Skin corrosion/irritation

Skin corrosion/irritation Slightly irritating., Based on available data the classification criteria are not met.

Animal data Primary dermal irritation index: 0.25

Serious eye damage/irritation

Serious eye damage/irritation Slightly irritating. Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative. Chromosome aberration: Negative. Bacterial reverse mutation test: Negative.

Carcinogenicity

Carcinogenicity	Not available.

Reproductive toxicity

Reproductive toxicity - fertility	Screening - NOAEL 800 mg/kg/day, Oral, Rat F1
Reproductive toxicity - development	Developmental toxicity: - NOAEL: 600 mg/kg/day, Oral, Rat

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	NOAEL 350 mg/kg/day, Oral, Rat

SECTION 12: Ecological Information

12.1. Toxicity

Ecological information on ingredients.

OPPEA / o-Phenylphenol EO Acrylate

Acute toxicity - fish	LC_{50}, 96 hours: 1.51 mg/l, Oryzias latipes (Red killifish)
Acute toxicity - aquatic invertebrates	LC_{50}, 48 hours: 2.62 mg/l, Daphnia magna
Acute toxicity - aquatic plants	LC_{50}, 72 hours: 9.79 mg/l, Freshwater algae
Acute toxicity - microorganisms	EC_{50}, 180 minutes: 177 mg/l, Activated sludge
Chronic toxicity - aquatic invertebrates	EC10, 21 days: 0.1 mg/l, Daphnia magna

12.2. Persistence and degradability

Ecological information on ingredients.

OPPEA / o-Phenylphenol EO Acrylate

Biodegradation	Inherently biodegradable.

12.3. Bioaccumulative potential

Partition coefficient log Kow: 3.68

Ecological information on ingredients.

OPPEA / o-Phenylphenol EO Acrylate

Bioaccumulative potential	No data available on bioaccumulation.

12.4. Mobility in soil

Ecological information on ingredients.

OPPEA / o-Phenylphenol EO Acrylate

Adsorption/desorption coefficient	Screening - Kow: 7244 @ 20°C
Henry's law constant	0.005 Pa m^3/mol @ 20°C

12.5. Results of PBT and vPvB assessment

MIRAMER M1142

Ecological information on ingredients.

OPPEA / o-Phenylphenol EO Acrylate

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Dispose of waste product or used containers in accordance with local regulations

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 3082

UN No. (IMDG) 3082

UN No. (ICAO) 3082

UN No. (ADN) 3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (o-phenylphenol EO Acrylate)

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (o-phenylphenol EO Acrylate)

Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (o-phenylphenol EO Acrylate)

Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (o-phenylphenol EO Acrylate)

14.3. Transport hazard class(es)

ADR/RID class 9

ADR/RID classification code M6

ADR/RID label 9

IMDG class 9

ICAO class/division 9

ADN class 9

Transport labels

14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ADN packing group III

MIRAMER M1142

ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user

EmS F-A, S-F

ADR transport category 3

Emergency Action Code •3Z

Hazard Identification Number (ADR/RID) 90

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

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

EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS
NLP

Canada - DSL/NDSL
NDSL

US - TSCA
SNUR; Significant New Use Rules

Australia - AICS
Not listed.

Japan - MITI
Yes

Korea - KECI
Yes

China - IECSC
Yes

MIRAMER M1142

Philippines – PICCS
Not listed.

New Zealand - NZIOC
Not listed.

Taiwan - NECI
Yes

SECTION 16: Other information

Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Issued by	Miwon Specialty Chemical Co.,Ltd.
Revision date	17/01/2018
Revision	4
SDS number	EU-SDS-317
SDS status	Approved.
Hazard statements in full	H225 Highly flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H336 May cause drowsiness or dizziness. 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.