

SAFETY DATA SHEET

EMP110/5512 WG LED

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name EMP110/5512 WG LED

Recommended use of the chemical and restrictions on use

Application Printing ink.

Uses advised against No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Supplier Electra Polymers Ltd
Roughway Mill
Tonbridge
Kent TN11 9SG
UK

Tel: +44 1732 811118

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Emergency telephone number

Emergency telephone +44 (0)1732 811 118 (08.30 - 17.00 GMT)

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Skin Sens. 1 - H317 Repr. 2 - H361f

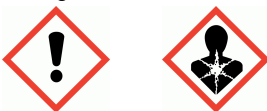
Environmental hazards Aquatic Chronic 3 - H412

Human health The product contains small amounts of organic solvents. Considered to be a low inhalation hazard at normal workplace temperatures. Contains a substance/a group of substances which may damage fertility. May cause skin sensitization or allergic reactions in sensitive individuals.

Environmental The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

Label elements

Pictogram



Signal word Warning

Hazard statements H317 May cause an allergic skin reaction.
H361f Suspected of damaging fertility.
H412 Harmful to aquatic life with long lasting effects.

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Precautionary statements	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P261 Avoid breathing vapor/ spray.</p> <p>P272 Contaminated work clothing must not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P302+P352 If on skin: Wash with plenty of water.</p> <p>P308+P313 If exposed or concerned: Get medical advice/ attention.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
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Contains	Ethoxylated (3) trimethylolpropane triacrylate, diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide, PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE
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Other hazards

This product does not contain any substances classified as PBT or vPvB. May cause skin sensitization or allergic reactions in sensitive individuals.

3. Composition/information on ingredients

Mixtures

Methoxypropoxypropanol	10-30%
CAS number: 34590-94-8	
Classification	
Not Classified	
Ethoxylated (3) trimethylolpropane triacrylate	5-10%
CAS number: 28961-43-5	
Classification	
Eye Irrit. 2 - H319	
Skin Sens. 1 - H317	
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	1-5%
CAS number: 75980-60-8	
Classification	
Skin Sens. 1B - H317	
Repr. 2 - H361f	
Aquatic Chronic 2 - H411	

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PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE CAS number: 162881-26-7	1-5%
Classification Skin Sens. 1 - H317 Aquatic Chronic 4 - H413	

The Full Text for all Hazard Statements are Displayed in Section 16.

Composition comments The Data Shown is in accordance with the latest EC Directives.

4. First-aid measures

Description of first aid measures

General information	Get medical attention if any discomfort continues. Treat symptomatically.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.
Ingestion	Do not induce vomiting. Get medical attention if any discomfort continues.
Skin Contact	Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Take off contaminated clothing and wash it before reuse.
Eye contact	Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Most important symptoms and effects, both acute and delayed

General information	Treat symptomatically.
Inhalation	No specific symptoms known. May cause respiratory irritation.
Ingestion	No specific symptoms known. May cause irritation.
Skin contact	May cause skin sensitization or allergic reactions in sensitive individuals.
Eye contact	No specific symptoms known. May cause eye irritation.

Indication of immediate medical attention and special treatment needed

Notes for the doctor May cause sensitisation by skin contact.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Extinguish with foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards	None.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Toxic gases or vapors.
<u>Advice for firefighters</u>	
Protective actions during firefighting	No specific firefighting precautions known.

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

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. No smoking, sparks, flames or other sources of ignition near spillage.

Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Avoid the spillage or runoff entering drains, sewers or watercourses. Contain spillage with sand, earth or other suitable non-combustible material.

Methods and material for containment and cleaning up

Methods for cleaning up Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely.

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Avoid inhalation of vapors and spray/mists. Wear protective clothing, gloves, eye and face protection.

Advice on general occupational hygiene Good personal hygiene procedures should be implemented. Do not eat, drink or smoke when using this product. Wash after use and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities

Storage precautions Keep away from heat, sparks and open flame. Store in tightly-closed, original container. Protect from freezing and direct sunlight.

Storage class Miscellaneous hazardous material storage.

Specific end uses(s)

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

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

Methoxypropoxypropanol

Long-term exposure limit (8-hour TWA): OSHA 100 ppm 600 mg/m³
Sk

Long-term exposure limit (8-hour TWA): ACGIH 100 ppm 606 mg/m³
Short-term exposure limit (15-minute): ACGIH 150 ppm 909 mg/m³
Sk

OSHA = Occupational Safety and Health Administration.

Sk = Danger of cutaneous absorption.

ACGIH = American Conference of Governmental Industrial Hygienists.

Methoxypropoxypropanol (CAS: 34590-94-8)

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DNEL Workers - Dermal; Long term systemic effects: 283 mg/kg Workers - Inhalation; Long term systemic effects: 308 mg/kg

PNEC - Fresh water; 19 mg/l - Marine water; 1.9 mg/l - Intermittent release; 190 mg/l - STP; 4168 mg/l - Sediment (Freshwater); 70.2 mg/l - Sediment (Marinewater); 7.02 mg/l - Soil; 2.74 mg/l

Ethoxylated (3) trimethylolpropane triacrylate (CAS: 28961-43-5)

DNEL Industry - Dermal; Long term systemic effects: 0.8 mg/m³

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (CAS: 75980-60-8)

DNEL Industry - Inhalation; Long term systemic effects: 3.5 mg/m³ Industry - Dermal; Long term systemic effects: 1 mg/m³

PNEC - Fresh water; 0.00353 mg/l - Marine water; 0.000353 mg/l - Intermittent release; 0.0353 mg/l - Sediment (Freshwater); 0.29 mg/kg - Sediment (Marinewater); 0.029 mg/kg - Soil; 0.0557 mg/kg

Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate general and local exhaust ventilation.

Eye/face protection

Wear eye protection.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Wear protective gloves made of the following material: Butyl rubber. Nitrile rubber. Neoprene. Polyvinyl chloride (PVC). Laminate of polyethylene and ethylene vinyl alcohol (PE/EVOH).

Other skin and body protection

Wear apron or protective clothing in case of contact.

Hygiene measures

Do not eat, drink or smoke when using this product. Use engineering controls to reduce air contamination to permissible exposure level. Wash after use and before eating, smoking and using the toilet. Provide eyewash station. Wash contaminated clothing before reuse.

Respiratory protection

No specific requirements are anticipated under normal conditions of use.

Environmental exposure controls

Residues and empty containers should be taken care of as hazardous waste according to local and national provisions. Prevent spillage entering a watercourse or sewer, contaminating soil or vegetation. If this is not possible notify police and appropriate authorities immediately.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Paste.
Color	White.
Odor	Mild.
Odor threshold	Not determined.

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pH	Not determined.
Melting point	Not determined.
Initial boiling point and range	Not determined.
Flash point	~ 78°C SCC (Setaflash closed cup). Estimated value.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	Not determined.
Upper/lower flammability or explosive limits	Not determined.
Other flammability	Not determined.
Vapor pressure	Not determined.
Vapor density	Not determined.
Relative density	1.45 @ 25°C
Bulk density	Not determined.
Solubility(ies)	Not determined.
Partition coefficient	Not determined.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	Kinematic viscosity > 20.5 mm ² /s.
Explosive properties	Not considered to be explosive.
Explosive under the influence of a flame	No
Oxidizing properties	The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidizing.
Comments	Information given is applicable to the product as supplied.
Other information	None.
Refractive index	Not determined.
Particle size	Not applicable.
Molecular weight	Not applicable.
Volatility	Not determined.
Saturation concentration	Not determined.
Critical temperature	Not determined.
Volatile organic compound	Not determined.

10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures and when used as recommended.

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Conditions to avoid	Keep away from heat, sparks and open flame. Avoid exposure to high temperatures or direct sunlight.
Materials to avoid	Strong alkalis. Strong oxidizing agents. Strong acids.
Hazardous decomposition products	Thermal decomposition or combustion products may include the following substances: Acrid smoke or fumes. Oxides of carbon. Oxides of nitrogen.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data No information available.

Human skin model test No information available.

Extreme pH Based on available data the classification criteria are not met.

Serious eye damage/irritation

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

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization Sensitizing.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met. Does not contain any substances known to be carcinogenic.

Reproductive toxicity

Reproductive toxicity - fertility Contains a substance/a group of substances which may damage fertility.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

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General information	The product contains small amounts of organic solvents. Extensive use of the product in areas with inadequate ventilation may result in the accumulation of hazardous vapor concentrations.
Inhalation	No specific health hazards known. May cause respiratory system irritation.
Ingestion	No specific health hazards known. May cause discomfort if swallowed.
Skin Contact	May cause sensitisation by skin contact.
Eye contact	Causes serious eye irritation.
Acute and chronic health hazards	May cause skin sensitization or allergic reactions in sensitive individuals. Suspected of damaging fertility.
Route of entry	Inhalation Skin absorption Skin and/or eye contact Ingestion
Target Organs	Reproductive system
Medical Symptoms	Symptoms following overexposure may include the following: Allergic rash.
Medical considerations	Allergic rash.

Toxicological information on ingredients.

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,000.0

Species Rat

Notes (dermal LD₅₀)

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Not determined.

Carcinogenicity

Carcinogenicity Not available.

12. Ecological Information

Ecotoxicity The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

Ecological information on ingredients.

Methoxypropoxypropanol

Ecotoxicity Not regarded as dangerous for the environment.

Toxicity

Acute toxicity - fish Not determined.

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Acute toxicity - aquatic invertebrates	Not determined.
Acute toxicity - aquatic plants	Not determined.
Acute toxicity - microorganisms	Not determined.
Acute toxicity - terrestrial	Not determined.
Chronic toxicity - fish early life stage	Not determined.
Short term toxicity - embryo and sac fry stages	Not determined.
Chronic toxicity - aquatic invertebrates	Not determined.

Ecological information on ingredients.

Methoxypropoxypropanol

Acute toxicity - fish	LC ₅₀ , 96 hours: >10000 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 1919 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 72 hours: >100 mg/l, Algae

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

Acute toxicity - fish	LC ₅₀ , 48 hours: 6.53 mg/l, Oryzias latipes (Red killifish)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 3.53 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: > 2.01 mg/l,
Acute toxicity - microorganisms	EC ₅₀ , 3 hours: > 1000 mg/l, Activated sludge

PHENYL BIS(2,4,6-TRIMETHYLBENZOYL)-PHOSPHINE OXIDE

Acute toxicity - fish	LC ₅₀ , 96 hours: >0.09 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: >1.175 mg/l, Daphnia magna

Persistence and degradability

Persistence and degradability	This product is not expected to be readily biodegradable.
Phototransformation	Not determined.
Stability (hydrolysis)	Not determined.
Biodegradation	Not determined.
Biological oxygen demand	Not determined.
Chemical oxygen demand	Not determined.

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Ecological information on ingredients.

Methoxypropoxypropanol

Persistence and degradability

The product is expected to be biodegradable.

Bioaccumulative potential

Bio-Accumulative Potential Not determined.

Partition coefficient Not determined.

Mobility in soil

Mobility The product contains substances which are water-soluble and may spread in water systems.

Adsorption/desorption coefficient Not determined.

Henry's law constant Not determined.

Surface tension Not determined.

Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Other adverse effects

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information Waste is classified as hazardous waste.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DoT).

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

None of the ingredients are listed or exempt.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

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SARA 313 Emission Reporting

None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)

Methoxypropoxypropanol

Present.

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances

Methoxypropoxypropanol

Present.

Massachusetts "Right To Know" List

Methoxypropoxypropanol

Present.

Rhode Island "Right To Know" List

Methoxypropoxypropanol

Present.

Minnesota "Right To Know" List

Methoxypropoxypropanol

Present.

New Jersey "Right To Know" List

Methoxypropoxypropanol

Pennsylvania "Right To Know" List

Methoxypropoxypropanol

Present.

Inventories

US - TSCA

All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

16. Other information

Issued by	HS&E Manager.
Revision date	6/16/2016
Revision	3
Supersedes date	6/16/2016

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Hazard statements in full	H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H361f Suspected of damaging fertility. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects. H413 May cause long lasting harmful effects to aquatic life.
NFPA - health hazard	Irritation, minor residual injury. (1)
NFPA - flammability hazard	Burns only if pre-heated. (1)
NFPA - instability hazard	Normally stable. (0)
NFPA - special hazard	N/A
ACA HMIS Health rating.	Slight hazard. (1)
ACA HMIS Flammability rating.	Burns only if pre-heated. (1)
ACA HMIS Physical hazard rating.	Normally stable. (0)
ACA HMIS Personal protection rating.	N/A.

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 process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.