

**TESLA NANO COATINGS, INC.
SAFETY DATA SHEET**

This Safety Data Sheet has been prepared to comply with the EU Regulation and the OSHA Hazard Communication Standard.

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION
AND THE COMPANY/UNDERTAKING**

1.1 Product Identifier:

Trade Name: TESLAN® 1101 ZN-CNT Low VOC Epoxy Primer – Part A

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:

Product Use: Primer Coating
Uses Advised Against: None

1.3 Details of the Supplier of the Safety Data Sheet:

Manufacturer: Tesla NanoCoatings, Inc.
50 North Avenue N.W.
Massillon, Ohio 44647 USA
Information Phone Number: +1-330-417-3550
Contact: Todd Hawkins
Email: todd@teslanano.com
Only Representative (REACH)/Nominated EU Importer:

nEMCEL LTD.
Myllarintie 1
40640 JYVASKYLA, Finland
Tel: +040-171-3894

1.4 Emergency Telephone Number: +1-330-417-3550 or +040-171-3894

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture:

GHS Classification:
Flammable Liquid Category 3 (H226)
Eye Irritant Category 2 (H319)
Skin Irritant Category 2 (H315)
Skin Sensitization Category 1 (H317)
Aquatic Acute Toxicity Category 1 (H400)
Aquatic Chronic Toxicity Category 1 (H410)

EU Classification:
Flammable, Irritant (Xi), Dangerous for the Environment (N) R10, R36/38, R43, R50/53

2.2 Label Elements:

Warning!



Contains: Epoxy Resin, Metallic Zinc

Hazard Phrases

H226	Flammable liquid and vapour.
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H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Phrases

P210	Keep away from heat, sparks, open flames, and hot surfaces. –No smoking.
P233	Keep container tightly closed.
P240	Ground or bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating, or lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing mist, vapours, or spray.
P264	Wash thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves, eye protection and face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice or attention.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P333 + P313	If skin irritation or rash occurs: Get medical advice or attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P370 + P378	In case of fire: Use water fog or spray, universal foam, carbon dioxide or dry chemical for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents and container in accordance with local and national regulations.

2.3 Other Hazards: None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture:

Chemical Name	CAS#	EINECS#	EU Classification (67/548/EEC)	CLP Annex VI Classification	%
Metallic Zinc	7440-66-6	231-175-3	N R50/53	Aq. Acute Cat 1 (H400), Aq. Chronic Cat 1 (H410)	65-75
Epoxy Resin	25068-38-6	500-033-5	Xi, N R36/38, R43, R51/53	Skin Irrit. Cat 2 (H315), Eye Irrit. Cat 2 (H319), Skin Sens. Cat 1 (H317), Aq. Chronic Cat 2 (H411)	10-20
Tert-Butyl Acetate	540-88-5	208-760-7	F R11, R66	Flam. Liq. Cat 2 (H225) EUH066	1-10
Benzene, Trimethyl-	25551-13-7	247-099-9	Xi, Xn R10, R21/22, R36/38	Flam. Liq. Cat 3 (H226), Acute Tox. Cat 4 (H302, H312), Skin Irrit. Cat 2	1-10

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				(H315), Eye Irrit. Cat 2 (H319)	
Zinc Oxide	1314-13-2	215-222-5	N R50/53	Aq. Acute Cat 1 (H400), Aq. Chronic Cat 1 (H410)	<5
1,2,4-Trimethylbenzene	95-63-6	202-436-9	Xi, Xn, N R10, R20, R36/37/38, R51/53	Flam. Liq. Cat 3 (H226), Acute Tox. Cat 4 (H332), Skin Irrit. Cat 2 (H315), Eye Irrit. Cat 2 (H319), STOT SE Cat 3 (H335), Aq. Chronic Cat 2 (H411)	<5
Solvent naphtha (petroleum), medium aliph.	64742-88-7	265-191-7	Xi, Xn, N R10, R38, R65, R51/53	Flam. Liq. Cat 3 (H226), Skin Irrit. Cat 2 (H315), Asp. Tox. Cat 1 (H304), STOT SE Cat 3 (H336), Aq. Chronic Cat 2 (H411)	<5

See Section 16 for further information on EU and GHS Classification.

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures:

Eye: Immediately rinse thoroughly with water for at least 15 minutes, while holding the eye lids open to be sure the material is washed out. Get medical attention if irritation persists.

Skin: Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation or rash occurs. Launder clothing before re-use.

Inhalation: Remove victim to fresh air. Give artificial respiration if needed. Get medical attention.

Ingestion: If the victim is conscious, rinse out the mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Get immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed: May cause moderate eye and skin irritation. May cause respiratory irritation. May cause skin sensitization. May cause stomach upset and indigestion if swallowed. Refer to Section 11 for detailed information.

4.3 Indication of any immediate medical attention and special treatment needed: Immediate medical attention is required for ingestion.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing Media: Use water fog or spray, universal foam, carbon dioxide or dry chemical.

5.2 Special Hazards Arising from the Substance or Mixture:

Unusual Fire and Explosion Hazards: Flammable liquid and vapor. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Vapors may form explosive mixtures with air in confined areas.

Combustion Products: Oxides of carbon, metallic impurities, smoke and hydrocarbons.

5.3 Advice for Fire-Fighters:

Wear an approved, positive pressure, self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water. Contain water used in firefighting from entering sewers or natural waterways.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Remove all ignition sources such as open flames, spark producing equipment, pilot lights, etc. Wear appropriate protective clothing to prevent eye and skin contact including impervious gloves, safety goggles and respirator if needed. Ventilate area.

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6.2 Environmental Precautions:

Do not let product enter drains. Avoid releases to the environment. Report spills and releases as required to appropriate authorities.

6.3 Methods and Material for Containment and Cleaning Up:

Cover with an inert absorbent material and collect into an appropriate container for disposal. Dispose of any contaminated cleaning materials in a sealed container.

6.4 Reference to Other Sections:

Refer to Section 8 for Personal Protective Equipment and Section 13 for Disposal information.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling: Avoid breathing vapors, aerosols and mists. Use with adequate ventilation. Avoid contact with the eyes, skin and clothing. Always wear impervious gloves, chemical safety goggles and protective clothing when handling this material. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.

7.2 Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry, well-ventilated location away from oxidizers and other incompatible materials. Keep containers closed when not in use. Never use pressure to empty containers.

7.3 Specific end use(s): Industrial use only

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters:

Chemical Name	Exposure Limits
Metallic Zinc (Powder form) (As Zinc and compounds)	0.1 mg/m ³ TWA, 0.4 mg/m ³ STEL (Respirable) DFG MAK 2 mg/m ³ TWA, 4 mg/m ³ STEL (Inhalable) DFG MAK
Epoxy Resin	None Established
Tert-Butyl Acetate	200 ppm TWA ACGIH TLV 200 ppm TWA OSHA PEL 50 ppm TWA, 200 ppm STEL DFG MAK 200 ppm TWA, 250 ppm STEL UK WEL
Benzene, Trimethyl- (As Trimethyl benzene, all isomers)	25 ppm TWA ACGIH TLV 20 ppm TWA, 40 ppm STEL DFG MAK 20 ppm TWA EU OEL 25 ppm TWA UK WEL
Zinc Oxide (Powder form)	2 mg/m ³ TWA, 10 mg/m ³ STEL (Respirable) ACGIH TLV 15 mg/m ³ (Total dust), 5 mg/m ³ (Respirable fraction) TWA OSHA PEL 0.1 mg/m ³ TWA, 0.4 mg/m ³ STEL (Respirable) DFG MAK 2 mg/m ³ TWA, 4 mg/m ³ STEL (Inhalable) DFG MAK
1,2,4-Trimethylbenzene (As Trimethyl benzene, all isomers)	25 ppm TWA ACGIH TLV 20 ppm TWA, 40 ppm STEL DFG MAK 20 ppm TWA EU OEL 25 ppm TWA UK WEL
Solvent naphtha (petroleum), medium aliph.	5 mg/m ³ TWA ACGIH TLV (inhalable) (As mineral oil) 5 mg/m ³ TWA OSHA PEL (As oil mist, mineral) 10 mg/m ³ TWA UK WEL (as oil mist, mineral)

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8.2 Exposure Controls:

Ventilation: Use only with adequate controls such as source enclosure or local exhaust ventilation to minimize worker exposure.

Personal Protective Equipment:

Respiratory Protection: If needed, an approved respirator with organic vapor cartridges and particulate prefilter may be used. For higher exposures, a supplied air respirator may be required. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.

Skin Protection: Impervious gloves such as nitrile rubber are recommended to prevent skin contact. Contact your glove supplier for selection assistance.

Eye Protection: Chemical safety goggles are recommended.

Other Protective Equipment: Impervious clothing as needed to avoid skin contact and contamination of personal clothing. An eye wash facility and safety shower should be available in the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic Physical and Chemical Properties:

Appearance: Dark gray liquid	Vapor Density: No data available
Odor: Mild odor	Specific Gravity: 2.59
Odor Threshold: No data available	Solubility: No data available
pH: Not available	Octanol/Water Partition Coefficient: No data available
Melting Point/Freezing Point: No data available	Autoignition Temperature: No data available
Boiling Point: No data available	Decomposition Temperature: No data available
Flash Point: 130°F (54.44°C)	Viscosity: No data available
Evaporation Rate: No data available	Explosive Properties: Not explosive
Flammable Limits: LEL: 1% UEL: 7%	Oxidizing Properties: Not an oxidizer
Vapor Pressure: No data available	Relative Density: No data available
Molecular Formula: Mixture	Flammability (solid, gas): Not applicable
Molecular Weight: Mixture	

9.2 Other Information: VOC: 1.54 lbs/gal / 184.3 g/L (calculated on non-exempt (US EPA) solvent basis), % Volatile weight: 12.6%, %Volatile volume: 37.9%.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: Not reactive.

10.2 Chemical Stability: Stable under normal storage and handling conditions.

10.3 Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

10.4 Conditions to Avoid: Keep away from heat, sparks, flames and other sources of ignition.

10.5 Incompatible Materials: Strong oxidizing and acids.

10.6 Hazardous Decomposition Products: Combustion will produce oxides of carbon, metallic impurities, smoke and hydrocarbons.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Trade Name:	TESLAN® 1101 ZN-CNT Low VOC Epoxy Primer – Part A
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Potential Health Effects:

Eye: May cause moderate eye irritation. Corneal injury is unlikely.

Skin: Product may cause moderate irritation, defatting and dermatitis. May cause allergic skin reaction (sensitization).

Inhalation: Inhalation of vapors or mists may cause mucous membrane and respiratory tract irritation, dizziness, weakness, fatigue nausea and headache.

Ingestion: May cause gastrointestinal irritation, nausea, vomiting and diarrhea. The adverse effects of ingestion have not been fully investigated, however ingestion should be avoided.

Chronic Hazards: None none.

Acute Toxicity Values:

Metallic Zinc: Oral rat LD50->2000 mg/kg; Inhalation rat LC50->5.41 mg/m3/4hr (no mortalities)

Epoxy Resin: Oral rat LD50->2000 mg/kg; Skin rat LD50- >2000 mg/kg

Tert-Butyl Acetate: Oral rat LD50-4500 mg/kg; Inhalation rat LC50-12.52 mg/L/4hr; Skin rabbit LD50->2000 mg/kg

Benzene, Trimethyl-: Oral rat LD50-8970 mg/kg

Zinc Oxide: Oral rat LD50 – >5000 mg/kg; Inhalation rat LC50 - >5.7 mg/L/4hr; Skin rat LD50 - >2000 mg/kg

1,2,4-Trimethylbenzene: Oral rat LD50-3280 mg/kg; Inhalation rat LC50- 10.2 mg/L/4hr; Skin rabbit LD50->2000 mg/kg

Solvent naphtha (petroleum), medium aliph.: Oral rat LD50->5000 mg/kg; Inhalation rat LC50->5.28 mg/L/4hr; Skin rabbit LD50->2000 mg/kg

Skin corrosion/irritation: No data available for the mixture. This product is classified as a skin irritant.

Eye damage/irritation: No data available for the mixture. This product is classified as an eye irritant.

Respiratory Irritation: May cause irritation of respiratory system.

Respiratory Sensitization: No data available.

Skin Sensitization: No data available for the mixture. This product is classified as a skin sensitizer.

Germ Cell Mutagenicity: No data available.

Carcinogenicity: None of the other components of this product are listed as carcinogens by OSHA, IARC, NTP, ACGIH and the EU CLP.

Reproductive Toxicity: No data available.

Specific Target Organ Toxicity:

Single Exposure: No data available

Repeat Exposure: No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity:

No data available for the mixture. The following information are for the components:

Metallic Zinc: 96 hr LC50 Mottled sculpin- 439 ug/L; 96 hr LC50 Fathead minnow – 330 -780 ug/L; 48 hr EC50 Daphnia magna- 1833 -2909 ug/L

Epoxy Resin: 96 hr LC50 Rainbow trout-1.2 mg/L; 48 hr EC50 Daphna magna- 1.1-2.8 mg/L

Tert-Butyl Acetate: 96 hr LC50 Rainbow trout- 240 mg/L; 48 hr EC50 Daphnia magna- 350 mg/L; 72 hr EC50 Green algae – 16 mg/L, 96 hr EC50 Green algae – 64 mg/L (NOEC- 2.3 mg/L)

Benzene, Trimethyl-: 96 hr LC50 Bluegill sunfish- 5.0 mg/L

Zinc oxide: 96 hr LC50 Rainbow trout- 1.1 ppm

1,2,4-Trimethylbenzene: 96hr LC50 Fathead minnow – 7.72 mg/L; 48 hr EC50 Daphnia magna- 3.6 mg/L

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Solvent naphtha (petroleum), medium aliph.: 96 hr LL50 Rainbow trout – 2-5 mg/L (NOEL -2.0 mg/L); 48 hr EL50 Daphnia magna- 1.4 mg/L; 72 hr EL50 Green algae- 1-3 mg/L

12.2 Persistence and Degradability: No data available. Biodegradation is not applicable to inorganic substances such as zinc and zinc compounds.

12.3 Bioaccumulative Potential: No data available

12.4 Mobility in Soil: No data available

12.5 Results of PBT and vPvB Assessment: No data available

12.6 Other Adverse Effects: Not applicable

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

Dispose in accordance with all local, state and federal regulations.

SECTION 14: TRANSPORTATION INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT	UN1263	Paint*	3	PG III	No
Canadian TDG	UN1263	Paint	3	PG III	No
EU ADR/RID	UN1263	Paint	3	PG III	Marine Pollutant
IMDG	UN1263	Paint	3	PG III	Marine Pollutant
IATA/ICAO	UN1263	Paint	3	PG III	No

* **Hazardous Substance (49CFR172.101):** Zinc (RQ 1,000 lbs) (1,408 lbs. product)

14.6 Special Precautions for User: Not applicable

14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environment Regulations/Legislation Specific for the Substance or Mixture:

EUROPEAN REGULATIONS

REACH: Tesla NanoCoatings, Inc. products comply with REACH regulation as applicable. For more information, contact Tesla NanoCoatings, Inc.

SVHC: This product contains the following Substances of Very High Concern (SVHCs): None

15.2 Chemical Safety Assessment: None Required

SECTION 16: OTHER INFORMATION

HMIS Ratings: Health – 2 Flammability - 2 Physical Hazard - 0
NFPA Ratings: Health - 2 Flammability - 2 Instability - 0

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SDS Revision History:

6/12/14: New SDS
3/01/16: Revised/Updated

GHS Classification for Reference (See Sections 2 and 3):

Acute Tox. Cat 4 Acute Toxicity Category 4
Aq. Acute Cat 1 Aquatic Acute Toxicity Category 1
Aq. Chronic Cat 1 Aquatic Chronic Toxicity Category 1
Aq. Chronic Cat 2 Aquatic Chronic Toxicity Category 2
Asp. Tox. Cat 1 Aspiration Toxicity Category 1
Eye Irrit. Cat 2A Eye Irritant Category 2A
Skin Irrit. Cat 2 Skin Irritant Category 2
Skin Sens. Cat 1 Skin Sensitization Category 1
Flam. Liq. Cat 2 Flammable Liquid Category 2
Flam. Liq. Cat 3 Flammable Liquid Category 3
STOT SE Cat 3 Specific Target Organ Toxicity Single Exposure Category 3
H225 Highly flammable liquid and vapor.
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
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.
EUH066 Repeated exposure may cause skin dryness or cracking.

EU Classes and Risk Phrases for Reference (See Sections 2 and 3):

F Highly flammable
N Dangerous for the Environment.
Xi Irritant
R10 Flammable
R11 Highly flammable
R20 Harmful by inhalation.
R21/22 Harmful in contact with skin and if swallowed.
R36/37 Irritating to eyes and respiratory system.
R36/37/38 Irritating to eyes, respiratory system and skin.
R36/38 Irritating to eyes and skin.
R38 Irritating to the skin.
R43 May cause sensitization by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 Harmful: May cause lung damage if swallowed.

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This above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. Tesla NanoCoatings, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

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