SAFETY DATA SHEET

Graphene Zinc Powder Coating A Component

SDS

Jiangsu Toppen Technology Co., Ltd.

- **Prepared according to GB/T 17519 and GB/T 16483**

Section 1 Product and Company Identification

> Product Identifier

Product Name	Graphene Zinc Powder Coating A Component
Synonyms	-
CAS No.	-
EC No.	-
Molecular Formula	-

> Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name	Jiangsu Toppen Technology Co., Ltd.
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Applicant Post Code	226413
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Supplier Address	Yangkou Port Industrial Area, Changsha Town, Rudong Country, Nantong City, Jiangsu Province, China
Supplier Post Code	226413
Supplier Telephone	+86-513-84525256
Supplier Fax	+86-513-84525256
Supplier E-mail	dingwei.cui@toppen.com.cn

> Emergency Phone Number

Emergency Phone Number	+86-513-84525256

Section 2 Hazards Identification

Hazard class and label elements of the product according to GB30000 series:

【TSCA】 United States Toxic Substances Control Act Inventory.
【DSL】 Canadian Domestic Substances List.
【IECSC】 China Inventory of Existing Chemical Substances.
【NZIoC】 New Zealand Inventory of Chemicals.
【PICCS】 Philippines Inventory of Chemicals and Chemical Substances.
【KECI】 Existing and Evaluated Chemical Substances.
【AICS】 Australia Inventory of Chemical Substances.
【ENCS】 Existing And New Chemical Substances.

> Chinese chemical inventory

Component	A	B	C	D	E	F	G	H	I
Poly(Bisphenol A-co-epichlorohydrin) glycidyl end-capped	×	×	×	×	×	×	×	×	×
Xylene	×	×	×	×	×	×	×	×	×
Zinc	√	×	×	×	×	√	√	×	×
Diiron trioxide	×	×	×	×	×	×	×	×	×
Bentonite	×	×	×	×	×	×	×	×	×
Xylene	√	×	×	×	×	×	×	×	×
Butan-1-ol	√	×	×	×	×	×	×	×	×

【A】Catalog of Hazardous Chemicals(2015 Edition), Notice 5th 2015, China State Administration of Work Safety.
【B】Catalog of Priority Hazardous Chemicals for Environment Management, Notice 33th 2014, Ministry of Environmental Protection of PRC.
【C】List of Toxic Chemicals Restricted to be Imported/Exported in China, Notice 85th 2013, Ministry of Environmental Protection of PRC.
【D】Catalog of Stupefacient and Psychotropic Substances(2013Edition), Notice 230th 2013, China Food and Drug Administration.
【E】Catalog of Hazardous Chemicals for Priority Management (First and Second batches), Notice 95th, 2011, Notice 12th 2013, China State Administration of Work Safety.
【F】List of Ozone Depletion Chemicals Controlled to be Imported/Exported in China (First to Sixth batches), Notice from 2000 to 2012 Ministry of Environmental Protection of PRC.
【G】Dangerous Chemicals Directory Used to Manufacure Exploder(2011 Edition), Notice 25th Nov. 2011, Ministry of Public Security of PRC1.
【H】Catalog of National Dangerous Wastes Annex A, Notice 1th 2008, Ministry of Environmental Protection of PRC.
【I】Catalog of Highly Toxic Chemicals, Notice 142th 2003, China Ministry of Health.

Note
"√" Indicates that the substance included in the regulations
"×" That no data or included in the regulations

Section 16 Additional Information

Creation Date 2018/04/25
Revision Date 2018/04/25
Reason for Revision -

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to GB/T16483-2013 and GB/T17519-2008. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user' s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense

arising out of or in any way connected with the handling, storage, use or disposal of the product.

> Emergency overview

Liquid. Flammable, its vapor and air mixture can form explosive mixture. Irritating to skin. SENSITISATION by skin contact. Risk of serious damage to eyes. Danger of damage to health by prolonged exposure. Very toxic to aquatic organisms,Use appropriate container to avoid environmental contamination. May cause long-term adverse effects in the aquatic environment. Use appropriate container to avoid environmental contamination.

> GHS Hazard Class

Flammable Liquids	Category 3
Skin Corrosion/Irritation	Category 2
Skin Sensitization	Category 1
Serious Eye Damage/Irritation	Category 1
Specific Target Organ Toxicity-Repeated Exposure	Category 2
Hazardous To The Aquatic Environment – Short-Term (Acute) Hazard	Category 1
Hazardous To The Aquatic Environment – Long-Term (Chronic) Hazard	Category 1

> GHS Label Elements

Pictogram

Signal Word **Danger**

> Hazard Statements

H226	Flammable liquid and vapour
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
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

> Precautionary Statements

Prevention

P210	Keep away from heat, hot surfaces, sparks,open flames and other ignition sources. Nosmoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.

P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection
Response	
P310	Immediately call a POISON CENTER/doctor.
P314	Get medical advice/attention if you feel unwell.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	
P403+P235	Store in a well-ventilated place. Keep cool.
Disposal	
P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

> Hazard description

Physical and chemical hazards

Flammable liquids, its vapor and air mixture can form explosive mixture.

Health hazards

Inhaled	Inhalation of the product may produce adverse health effects or irritation of the respiratory tract following discomfort.
Ingestion	Accidental ingestion of the product may be harmful to the health of the individual.
Skin Contact	The product may cause an allergic skin reaction following direct contact with the skin. The product can cause skin irritation following direct contact with the skin. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Eye	The product can produce severe chemical burns to the eye following direct contact. This product may cause temporary discomfort following direct contact with the eye.

Environmental hazards

This product is very toxic to aquatic life. This product is very toxic to aquatic life with long lasting effects. Please refer to 12th chapter of SDS.

Section 3 Composition/Information on Ingredients

Component	Concentration (weight percent, %)	CAS No.	EC No.
Poly(Bisphenol A-co-epichlorohydrin) glycidyl end-capped	Commercial secrets	25036-25-3	-
Xylene	Commercial secrets	1034343-98-0	215-535-7
Zinc	Commercial secrets	7440-66-6	231-175-3
Diiron trioxide	Commercial secrets	1309-37-1	215-168-2
Bentonite	Commercial secrets	1302-78-9	215-108-5
Xylene	Commercial secrets	1330-20-7	215-535-7
Butan-1-ol	Commercial secrets	71-36-3	200-751-6

Section 4 First Aid Measures

> Description of First Aid Measures

General Advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin Contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of First-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

> Most Important Symptoms and Effects, both Acute and Delayed

1. Remove all sources of ignition and increase ventilation.
2. Avoid contact with skin and eyes.
3. Avoid inhalation of vapor or mist.
4. Use personal protective equipment including respirator.

> Indication of Any Immediate Medical Attention and Special Treatment Needed

1. Treat symptomatically.
2. Symptoms may be delayed.

Section 5 Fire Fighting Measures

> Extinguishing Media

Suitable Extinguishing Media	Dry chemical, carbon dioxide or alcohol-resistant foam.
Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter or spread fire.

> Specific Hazards Arising from the Substance or Mixture

1. Will form explosive mixtures with air.
2. Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
3. Vapours may travel to source of ignition and flash back.
4. Liquid and vapour are flammable.
5. Containers may explode when heated.
6. Fire exposed containers may vent contents through pressure relief valves.
7. May expansion or decompose explosively when heated or involved in fire.

> Advice for Firefighters

1. As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent)and full protective gear.
2. Fight fire from a safe distance, with adequate cover.
3. Prevent fire extinguishing water from contaminating surface water or the ground water system.

> Personal Precautions, Protective Equipment and Emergency Procedures

Section 6 Accidental Release Measure

1. Avoid breathing vapors and contacting with skin and eye.
2. Beware of vapours accumulating to form explosive concentrations.
3. Vapours can accumulate in low areas.
4. Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5. Ensure adequate ventilation. Remove all sources of ignition.
6. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
7. Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

> Environmental Precautions

1. Prevent further leakage or spillage if safe to do so.
2. Discharge into the environment must be avoided.

> Methods and Materials for Containment and Cleaning Up

1. Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
2. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Section 7 Handling and Storage

> Precautions for Handling

1. Avoid inhalation of vapors.
2. Use only non-sparking tools.
3. To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
4. Use explosion proof equipment.
5. Handling is performed in a well ventilated place.
6. Wear suitable protective equipment.
7. Avoid contact with skin and eyes.
8. Keep away from heat/sparks/open flames/ hot surfaces.
9. Take precautionary measures against static discharges.

> Precautions for Storage

1. Keep containers tightly closed.
2. Keep containers in a dry, cool and well-ventilated place.
3. Keep away from heat/sparks/open flames/ hot surfaces.
4. Store away from incompatible materials and foodstuff containers.

Section 8 Exposure Controls/Personal Protection

> Control Parameters

Occupational Exposure Limit Values

Component	Standard	Type	Standard value	remark
Xylene	GBZ 2.1-2007	PC-TWA	50 mg/m3	-
		PC-STEL	100 mg/m3	
Butan-1-ol	GBZ 2.1-2007	PC-TWA	100 mg/m3	-
		PC-STEL	-	

Biological Limit Values

No information available

Monitoring Methods

1. EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2. GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard).

> Engineering Controls

1. Ensure adequate ventilation, especially in confined areas.
2. Ensure that eyewash stations and safety showers are close to the workstation location.
3. Use explosion-proof electrical/ventilating/lighting/equipment.
4. Set up emergency exit and necessary risk-elimination area.

> Personal Protection Equipment

Eye Protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand Protection	Wear protective gloves (such as butyl rubber), passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and Body Protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

Section 9 Physical and Chemical Properties

Appearance: Gray viscous liquid

Odor: No information available

Odor Threshold: No information available

pH: No information available

Melting Point/Freezing Point (℃): No information available

Initial Boiling Point and Boiling Range (℃): No information available

Flash Point (℃)(Closed Cup): 29

Evaporation Rate: No information available

Flammability: Not applicable

Upper/lower explosive limits[%(v/v)]: Upper limit: No information available; Lower limit: No information available

Vapor Pressure (MPa): No information available

Relative Vapour Density(Air = 1): No information available

Relative Density(Water=1): No information available

Solubility: No information available

n-Octanol/Water Partition Coefficient: No information available

Auto-Ignition Temperature(℃): No information available

Decomposition Temperature (℃): No information available

Kinematic Viscosity (mm^2/s): No information available

Section 10 Stability and Reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.

Chemical Stability	Stable under proper operation and storage conditions.
Possibility of Hazardous Reactions	Reacts severely with halogens, interhalogens or other strong oxidants, or causes a fire. Reacts with active metals and poses an explosive potential or fire.
Conditions to Avoid	Incompatible materials, heat, flame and spark.
Incompatible Materials	Halogen, interhalogen, strong oxidant, water and acids. Active metal, alcohols, aldehydes, carbon disulfide, carbon, sulfur, phosphorus, boron, reducing agents, metallic acetylenes and metallic carbonates.
Hazardous Decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11 Toxicological Information

> Acute Toxicity

Component	CAS No.	LD_{50}(Oral)	LD_{50}(Dermal)	LC_{50}(Inhalation, 4h)
Xylene	1330-20-7	4300mg/kg(Rat)	> 1700mg/kg(Rabbit)	21.712mg/L(Rat)
Butan-1-ol	71-36-3	790mg/kg(Rat)	3400mg/kg(Rabbit)	24.252mg/L(Rat)

> Skin Corrosion/Irritation

Causes skin irritation(Category 2)

> Serious Eye Damage/Irritation

Causes serious eye damage(Category 1)

> Skin Sensitization

May cause an allergic skin reaction(Category 1)

> Respiratory Sensitization

No information available

> Germ Cell Mutagenicity

No information available

> Carcinogenicity

ID	CAS No.	Component	IARC	NTP
1	25036-25-3	Poly(Bisphenol A-co-epichlorohydrin) glycidyl end-capped	Not Listed	Not Listed
2	1034343-98-0	Xylene	Not Listed	Not Listed
3	7440-66-6	Zinc	Not Listed	Not Listed
4	1309-37-1	Diiron trioxide	Category 3	Not Listed
5	1302-78-9	Bentonite	Not Listed	Not Listed
6	1330-20-7	Xylene	Category 3	Not Listed
7	71-36-3	Butan-1-ol	Not Listed	Not Listed

> Reproductive Toxicity

No information available

> Reproductive Toxicity (Additional)

No information available

> STOT-Single Exposure

No information available

> STOT-Repeated Exposure

May cause damage to organs through prolonged or repeated exposure(Category 2)

> Aspiration Hazard

No information available

Section 12 Ecological Information

> Acute Aquatic Toxicity

Component	CAS No.	Fish	Crustaceans	Algae
Xylene	1330-20-7	LC_{50}: 15.7mg/L (96h)(Fish)	No information available	No information available
Butan-1-ol	71-36-3	LC_{50}: 1910mg/L (96h)(Fish)	EC_{50}: 1980mg/L (48h)	ErC_{50}: >1000mg/L (72h)
Zinc	7440-66-6	LC_{50}: 2.01mg/L (96h)(Fish)	EC_{50}: 1.33mg/L (48h)	No information available
Bentonite	1302-78-9	LC_{50}: 19000mg/L (96h)(Fish)	No information available	No information available

> Chronic Aquatic Toxicity

Component	CAS No.	Fish	Crustaceans	Algae
Butan-1-ol	71-36-3	No information available	NOEC: 4.1mg/L	NOEC: 180mg/L

> Others

Persistence and Degradability	No information available
Bioaccumulative Potential	No information available
Mobility in Soil	No information available
Results of PBT and vPvB Assessment	Poly(Bisphenol A-co-epichlorohydrin) glycidyl end-capped does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Xylene does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Zinc does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Diiron trioxide does not meet the criteria for PBT and vPvB according to

Regulation (EC) No 1907/2006, annex XIII.
Bentonite does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.
Xylene does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.
Butan-1-ol does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Section 13 Disposal Considerations

Waste Chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated Packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal Recommendations	Refer to section 13.1and 13.2.

Section 14 Transport Information

Transporting Label

Marine pollutant	Yes
UN Number	1263
UN Proper Shipping Name	PAINT
Transport Hazard Class	3
Transport Subsidiary Hazard Class	None
Packing Group	Ⅲ

Section 15 Regulatory Information

> International Chemical Inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Poly(Bisphenol A-co-epichlorohydrin) glycidyl end-capped	×	√	√	√	√	√	√	√	×
Xylene	×	×	×	×	×	×	×	×	×
Zinc	√	√	√	√	√	√	√	√	×
Diiron trioxide	√	√	√	√	√	√	√	√	√
Bentonite	√	√	√	√	√	√	√	√	×
Xylene	√	√	√	√	√	√	√	√	√
Butan-1-ol	√	√	√	√	√	√	√	√	√

【EINECS】 European Inventory of Existing Commercial Chemical Substances.