

Safety Data Sheet

Issue date: 08 Dec., 2016
Revision date: 12 Jul., 2021

1. Identification

Product name : Organic Photoconductor for KIP7570

Manufacturer : KATSURAGAWA ELECTRIC CO., LTD.
Address : 21-1, Shimomaruko 4-chome, Ota-ku, Tokyo, 146-8585, Japan

Phone number : +81-3-3758-8005

Emergency phone number : +81-3-3758-8005 (Weekday, 9:00-17:00)

Recommended use of the product and restrictions on use : Photoreceptor used for image formation in electrophotographic equipment.
Other uses are not recommended.

2. Hazards identification

GHS classification : This product is an "article" and outside the scope of the GHS system.

GHS label elements

Symbol : Not applicable

Signal words : Not applicable

Hazard statements : Not applicable

Precautionary statement

Prevention : Not applicable

Response : Not applicable

Storage : Not applicable

Disposal : Not applicable

Hazard not applicable to GHS classification category : The hazardousness of this product is low under normal and intended use.

3. Composition / information on ingredients

Distinction of substance or mixture : Other (article)

Chemical name or generic name : Electrophotographic organic photoreceptor

Components :

No.	Components name	CAS RN [®]	Molecular formula	Content
1	Aluminum cylinder (substrate)	trade secret	trade secret	> 97%
2	Binder resin	trade secret	trade secret	< 1%
3	Photosensitive material	trade secret	trade secret	< 1%
4	Pigment	trade secret	trade secret	< 1%

Others : This product is an "article" and outside the scope of GHS, but information of the contained

chemical substances is described.

4. First-aid measures

If inhaled	: No inhalation will occur in normal use. If exposed to the dust of photoconductive layer, get medical attention if cough or other symptoms develop.
If on skin	: None special treatment will be required. If exposed to the dust of photoconductive layer, wash out with water.
If in eyes	: No eye contact will occur in normal use. If exposed to the dust of photoconductive layer, flush eyes with water. Get medical attention, if feels irritation.
If swallowed	: No ingestion will occur in normal use. If swallowed the dust of photoconductive layer, induce vomiting as much as possible. Get medical attention, if feels something bad.

5. Fire-fighting measures

Extinguishing media	: Water, foams, dry chemical, CO ₂ , dry sand
Unsuitable extinguishing media	: No information
Specific hazards arising	: <ul style="list-style-type: none"> • May generate harmful or irritating gases such as carbon dioxide and carbon monoxide in a fire.
Special fire fighting procedures	: Firefighting activities as far as possible from the windward. Use appropriate extinguishing media.
Special protective equipment and precautions for fire-fighters	: Wear appropriate air respirator, protective clothing (heat resistance) according to the situation.
Others	: -

6. Accidental release measures

Personal precautions protective equipment and emergency procedures	: No special measures are required under normal use.
Environmental precautions	: Collect spillages. No special measures are required for collection.
Methods and materials for containment and cleaning up	: This product does not leak in normal handling because it is an "article", but if dust is generated by cutting etc., collect it by sweeping up.
Preventive measures for secondary disaster	: No information

7. Handling and storage

Handling	
Technical measures	: No special safety measures are necessary.
Precautions for safe handling	: <ul style="list-style-type: none"> • Avoid direct sunlight or organic solvent vapor. • Do not touch the photosensitive layer directly to prevent deterioration of characteristics.
Storage	
Conditions for safe storage	: <ul style="list-style-type: none"> • Keep in a dark place under normal environment condition avoiding direct sunlight. • Avoid dew condensation or organic solvent vapor. • Since there is a possibility of accidents resulting in injury, pay attention to general product handling such as cargo collapse prevention and fall prevention.
Container and packaging material for safe storage	: <ul style="list-style-type: none"> • No information

8. Exposure controls/ personal protection

Administrative levels	: Not specified.
Occupational exposure limits	: Not specified.
Engineering measures	: Not particularly necessary
Personal protective equipment	:
Respiratory protection	: Not particularly necessary
Hand protection	: Not particularly necessary
Eye protection	: Not particularly necessary

Skin and body protection : · Not particularly necessary

9. Physical and chemical properties

Appearance (physical state, form, color etc.)

Physical state : · Solid
 Shape : · Cylindrical form (article)
 Color : · Greenish
 Odor : · Odorless
 Boiling point, initial boiling point, and boiling range : · No information
 Flash point : · No information
 Combustibility (solid) : · No information
 Upper flammability or explosive limits : · No information
 Lower flammability or explosive limits : · No information
 Vapor pressure : · No information
 Specific gravity : 2.7 g/cm³
 Solubility : · Insoluble in water. Photosensitive layer is soluble in organic solvent (tetrahydrofuran etc.).
 Auto-ignition temperature : · No information
 Viscosity (viscosity coefficient) : · No information
 Other data : · No information

10. Stability and reactivity

Reactivity : No reaction at normal temperature and pressure.
 Chemical stability : Stable chemically under normal handling.
 Possibility of hazardous reactions : Although the product is not harmful under normal handling, it generates carbon monoxide and carbon dioxide by burning.
 Conditions to avoid : Use near fire
 Incompatible materials : Oxidizing material
 Hazardous decomposition products : Carbon monoxide and carbon dioxide
 Others : -

11. Toxicological information

Acute toxicity
 Oral : Acute toxicity test by oral administration using rats was conducted, and the lethal dose (LD 50 value) was 2,000 mg / kg or more. 1)
 Skin Corrosion / Irritation : No skin irritation potential to the rabbit skin. 1)
 Serious eye damage / Eye irritation : Reversible and mild eye irritation potential to the rabbits eyes. 1)
 Germ cell mutagenicity : The bacterial reverse-mutation assay (Ames test) showed negative result. 1)
 Others : The whole product is an "article" and outside the scope of GHS. But the data on the photosensitive layer which is a part of this product are described if they are available.

12. Ecological information

Ecotoxicity : No information
 Persistence and degradability : No information
 Bioaccumulation : No information
 Mobility in soil : No information

Hazardous to the ozone layer : No information

Others : The whole product is an "article" and outside the scope of GHS. But the data on the photosensitive layer which is a part of this product are described if they are available.

13. Disposal considerations

Residual waste : ·Dispose of contents/container in accordance with local/regional/national/international regulation.
· Comply with related laws and regulations when incinerating.

14. Transport information

International regulation

Marine transport

UN number : . None allocated

UN proper shipping name : None

UN classifications : None

Packing group : None

Air transport

UN number : None allocated

UN proper shipping name : None

UN classifications : None

Packing group : None

Others : -

15. Regulatory information

USA Hazard Communication Standard 29 CFR 1910.1200 (HCS)
· According to 1910.1200(c), this product is an "article".

EU Regulation (EC) No 1907/2006 (REACH)
· According to Article 3, this product is an "article".
· Substances in Annex XIV (Authorization) or the Candidate list of SVHC : None
· Substances in Annex XVII (Restriction) : None

Directive 2011/65/EU (RoHS) : This product complies with the RoHS Directive.

16. Other information

Cited document:

- 1) In-house data

Safety Data Sheet

SECTION 1 Identification of the substance/preparation and of the company/undertaking

1.1. Product identifier:

Product Name: Toner for KIP 7570

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

Relevant identified uses: Toner for electrophotographic apparatus

Descriptor: Industrial uses (SU3), Ink and toners (PC18)

1.3. Details of the supplier of the safety data sheet:

Supplier: KATSURAGAWA ELECTRIC CO., LTD.

Address: 21-1, Shimomaruko 4-Chome, Ota-ku, Tokyo 146-8585, Japan

Telephone number: +81-3-3758-8005

1.4. Emergency telephone number: +81-3-3758-8005 (Weekday, 9:00-17:00)

SECTION 2 Hazards identification

2.1 Classification of the Substance or mixture:

Classification according to Regulation (EC) No 1272/2008 [CLP]

Not classified as a hazardous mixture

Physical Hazards

Flam. Sol:	Not classified
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Health Hazards

Acute Tox. -oral:	Not classified
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Acute tox. -inhalation:	Not classified
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Skin Corr/ Irrit:	Not classified
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Eye Dam/ Irrit:	Not classified
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Skin Sens:	Not classified
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Muta:	Not classified
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Environmental Hazards

Aquatic Acute:	Not classified
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Aquatic Chronic:	Not classified
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All other Classifications not listed are either "Not applicable" or "Not available"

2.2 Label elements:

Labeling according to Regulation (EC) No 1272/2008 [CLP]

None

2.3 Other hazards:

Risk of dust-explosion if finely dispersed in air with an ignition source.

SECTION 3 Composition/information on ingredients

3.2 Mixtures:

Ingredient Name	Weight %	CAS No.	REACH Registration	Classification according to Regulation(EC) No 1272/2008 [CLP]
Saturated polyester resin	80-95	Confidential	Registered*	None
Carbon black	1-8	1333-86-4	Registered	None
Wax	1-5	Confidential	Registered*	None
Silica	1-5	67762-90-7	Registered	None
Zinc(II) complex salt**	<1.0	42405-40-3	Registered	Flam. Sol.1, H228 Acute Tox.4, H302 Aquatic Acute1, H400 Aquatic Chronic1, H410

*Registered as all applicable monomers

** Zinc, (bis[3,5-di(tert-butyl)-2-hydroxybenzoato-O1, O2], (T-4)

See SECTION 16 for full text of Classification Hazard Statements.

SECTION 4 First aid measures

4.1 Description of first aid measures:

Immediate medical procedures:

None

Inhalation:

Move to fresh air and gargle with water.

Skin contact:

Wash with soap and water.

Eye contact:

Do not rub. Flush with large amount of water until particles are removed.

Seek medical advice

Ingestion:

Rinse mouth, then drink several glasses of water to dilute stomach content.

Seek medical advice.

4.2 Most important symptoms, both acute and delayed:

Inhalation of excessive amounts of dust may cause physical irritation to respiratory system.

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

None

SECTION 5 Firefighting measures

5.1 Extinguishing media:

Water, CO₂, dry chemicals

5.2 Special hazards arising from substance or mixture:

Can form explosive dust-air mixture if finely dispersed in air.

5.3 Advice for firefighters:

Avoid inhalation of fume and smoke.

SECTION 6 Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures:**

Avoid breathing dust. Dust-proof masks should be worn when working.

6.2 Environmental precautions:

Do not flush into sewer or natural watercourse.

6.3 Methods and material for containment and cleaning up:

For containment:

Keep in air-tight container.

For cleaning up:

Sweep the spilled powder slowly.

Clean the remainder with wet cloth, wet paper, or vacuum cleaner.

Vacuum cleaner must be equipped with dust proof filter and must be explosion-proof.

For containment:

Keep in air-tight container.

SECTION 7 Handling and storage**7.1 Precautions for safe handling:**

Avoid breathing dust. Keep away from ignition sources.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry location away from direct sunlight.

7.3 Specific end use(s):

For use in electrophotographic apparatus such as laser-beam printers and copiers.

SECTION 8 Exposure controls/personal protection**8.1 Control parameters:**

As mixture: Dust, respirable

Country	Limit value –Eight hours		Limit value –Short term	
	ppm	mg/m ³	ppm	mg/m ³
European Union	Not established	Not established	Not established	Not established
Austria	-	5	-	10
Belgium	-	3	-	-
France	-	5 (respirable aerosol)	-	-
Germany (AGS)	-	1.25	-	-
Germany (DFG)	-	1.5	-	-
Hungary	-	6	-	-
Ireland	-	4	-	-
Spain	-	3	-	-
Sweden	-	5	-	-
Switzerland	-	3	-	-
USA (ACGIH)	-	3	-	-
USA (OSHA PEL)	-	5	-	-

Applicable control parameters are not established in other Community Members not listed

Constituent substances:

This mixture is considered as a "Special Mixture" where substances are modulated by their inclusion within the matrix of the mixture; thus, control parameters for constituent substances do not apply in use of this mixture.

8.2 Exposure controls:

Appropriate engineering controls:

Use of local ventilation is recommended.

Individual protection measures:

Eye/face protection:	Protective goggles should be used when handling bulk.
Skin Protection:	Not required
Hand protection:	Not required
Respiratory protection:	Dust-proof mask should be used when handling bulk.

SECTION 9 Physical and chemical properties**9.1 Information on basic physical and chemical properties:**

Appearance:	Black powder (average particle size: app. 10 microns)
Odour:	Slight odour
pH:	Not applicable
Melting point:	App. 145°C (flow temperature)
<i>Substance Zinc(II) complex salt:</i>	242.7-244.2°C
Boiling point:	Not applicable
Flash point:	Not applicable
Evaporation rate:	Not applicable
Flammability:	Not flammable; Not classified
<i>Substance Zinc(II) complex salt:</i>	Highly flammable. (Test method A10); Flam. Sol.1**
Explosive limits:	Not available
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density:	1.1-1.3
Solubility:	Insoluble to water, partially soluble to toluene and xylene
<i>Substance Zinc(II) complex salt:</i>	187.7mg/l in water, 478mg/100g Fat
Partition coefficient:	Not available
<i>Substance Zinc(II) complex salt:</i>	Log P_{ow} =2.32 at 18°C
Auto-ignition temperature:	Not available
Decomposition temperature:	>200°C
Viscosity:	Not applicable
Explosive properties:	Explosive dust-air mixture is formed when finely dispersed in air
Oxidizing properties:	Not available
<i>Substance Zinc(II) complex salt:</i>	Oxidizing substance. (Max Burning Rate =1.98mm/s)

9.2 Other information: None

SECTION 10 Stability and reactivity

10.1 Reactivity:	No data
10.2 Chemical stability:	Stable
10.3 Possibility of hazardous reactions:	No data
10.4 Conditions to avoid:	Do not disperse in air with ignition source.
10.5 Incompatible materials:	No data
10.6 Hazardous decomposition products:	Decomposition will not occur under intended uses.

SECTION 11 Toxicological information**11.1 Information on toxicological effects:**

Acute toxicity: Not classified
 Inhalation: LC₅₀: inh-rat > 5.19mg/L/4 hours (maximum concentration achieved)
 Ingestion: LD₅₀: oral-rat > 2500mg/kg body weight*

Substance Zinc(II) complex salt: Acute Tox. 4

Oral: LD₅₀(Rat): 1,800 mg/kg

Dermal: LD₅₀(Rat): >2,000 mg/kg

Inhalation:LC₅₀: Not available

Skin corrosion/irritation: Not classified, Rabbit-4hr; not irritant*

Serious eye damage/irritation: Not classified, Rabbit-3days; not irritant*

Skin sensitization: Not classified, Guinea pig–maximization; not a sensitizer*

Germ cell mutagenicity: Ames test Negative*

Carcinogenicity: Not available

Carbon black contained in this toner is classified as “group 2B” (possibly carcinogenic to humans) by IARC. However, long-term inhalation test on rats using a toner preparation containing carbon black did not show any carcinogenic effects. Thus, enough data to classify carcinogenicity of this toner mixture is concluded to be “Not available”.

Substance carbon black: Substance in is listed as “group 2B” by IARC, but not classified by the Community or US NTP, OSHA or ACGIH. US NIOSH in 1978 issued a document to recommend exposure limits for carbon black dust with more than 0.1% content of PAH. The carbon black used in this mixture contain far less concentration of PAH and is processed to avoid generation of respirable or inhalable dusts. Thus, carcinogenicity of this substance is concluded to be “Not available”.

Reproductive toxicity: Not available, No constituent components are classified

STOT-single exposure: Not available, No constituent components are classified

STOT-repeated exposure: Not available

In study of rats exposed to a toner containing carbon black, mild degree of lung fibrosis was observed in groups exposed to high concentration(16mg/m³) and mid-concentration(4mg/m³), but no pulmonary change was reported in the group exposed to low concentration(1mg/m³). In normal conditions of use (in electro-photographic apparatus) maximum concentration of toner released is significantly lower than 1mg/m³, and will have no chronic effects to human health.

In cases where this product is used in bulk for purpose such as filling, cleaning, etc. of the apparatus, exposure should be controlled with care according to Sections 7 and 8. Thus, enough data to classify STOT-RE of this toner mixture is concluded to be “Not available”.

Substance carbon black: Results of epidemiological studies of carbon black production workers suggest that cumulative exposure may result in small decrements in lung function. The relationship between other respiratory symptoms and exposure to carbon black is not clear. The carbon black used in this mixture is processed to minimize generation of respirable dusts. Thus, STOT-RE of this substance is concluded to be “Not available”.

Aspiration hazards: Not available, No constituent components are classified

**data from toner with similar composition*

SECTION 12 Ecological information**12.1 Toxicity**

Not classified

Fish(*Oryzias latipes*): LC₅₀(96hr) > 100mg/L (WAF)*

Crustaceans(*Daphnia magna*): EC₅₀(48hr) > 100mg/L (WAF)*

Algae(*Pseudokirchneriella subcapitata*): E_rL₅₀(0-72h)>100 mg/L, NOELR=100mg/L (WAF)*

Substance Zinc(II) complex salt: Aquatic Acute 1

Fish(*Oryzias latipes*): LC₅₀(96hr): 5.5mg/L

Crustaceans(*Daphnia magna*): EC₅₀(48hr): 0.73mg/L (NOEL: 0.5mg/l)

Algae(*Pseudokirchneriella subcapitata*): E_bL₅₀(72h): 0.64mg/l, (NOEC: 0.20mg/l)

12.2 Persistence and degradability

Not available

Substance Zinc(II) complex salt: Not readily biodegradable. (15% after 28days)

12.3 Bioaccumulative potential

Not available

Substance Zinc(II) complex salt: Log P_{ow}=2.32; Not suspected to be bioaccumulative.

12.4 Mobility in soil

Not available

12.5 Results of PBT and vPvB assessment:

This mixture does not contain any substance that are assessed to be PBT or vPvB.

12.6 Other adverse effects:

Not available

**data from toner with similar composition.*

SECTION 13 Disposal consideration**13.1 Waste treatment methods**

Dispose according to local authority requirements.

Waste should not be released to sewer or natural watercourse.

DO NOT put toner powder or container into fire.

SECTION 14 Transport information**14.1 UN number**

None

14.2 UN proper shipping name

None

14.3 Transport hazard class(es)

ADR / RID / ADN: none

IMDG Code: none

ICAO-TI / IATA-DGR: none

14.4 Packing group

None

14.5 Environmental hazards:

Not classified as environmentally hazardous under UN Model Regulations.

Not classified as marine pollutant under IMDG Code.

14.6 Special precautions for user:

Handling such as exposure to water, rolling, falling, or giving shock to the container may result in breakage of the inner bag and result in scattering of the mixture.

Avoid direct sunlight and hot places. (See also: Section 7)

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

None

SECTION 15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

EU Regulations

Regulation (EC) No 1272/2008 [CLP]

Not classified as hazardous mixture, label not required

Regulation (EC) No 1907/2006 [REACH]

Restricted substances: None

SVHC: None*

Registration: See SECTION 3

**Up to 24th updated list issued 19-Jan.-2021*

National regulations

France: French enforcement Decree no. 2012-232 of 17-February, 2012

Substances "Carbon black" and "Silica" are considered as nanomaterial, but they are considered to be modulated by their inclusion within the matrix of the mixture; thus, they are not considered to be "contained without being linked to the mixture."

Germany: Wassergefährdungsklasse (WGK)

Substance "Zinc(II) complex salt" is considered as aquatic toxicity, but this toner is not classified in EU regulation. See SECTION 12 for details.

15.2 Chemical safety assessment:

Since the ingredient "Zinc(II) complex salt" is classified as very toxic to aquatic life, a representing toner sample has been tested for toxicity to aquatic life as a mixture. See SECTION 12 for details.

SECTION 16 Other information

Issued according to (EC) 453/2010 Annex II amendment of REACH Annex II

*This SDS conforms to Regulation (EU) No.1907/2006 and 2015/830,**US OSHA Hazcom 2012 (29 CFR1910.1200), Canada WHMIS 2015 and the GHS.***Indication of changes:**

16-July-2021: First issued

Abbreviations and acronyms:

FAX:	Facsimile
CLP:	Classification Labelling Packaging regulation
Flam. Sol.	Flammable Solid
Tox.	Toxicity
Corr.	Corrosivity
Irrit.	Irritation
Dam.	Damage
Sens.	Sensitization
Muta.	Mutagenicity
CAS:	Chemical Abstract Service
REACH:	Registration, Evaluation, Authorization, and Restriction of Chemicals
ppm:	parts per million (weight/weight)
AGS	Ausschuss für Gefahrstoffe
DFG	Deutsche Forschungsgemeinschaft
USA	United States of America
ACGIH:	American Conference of Governmental Industrial Hygienists
TWA:	Time weighted Average
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
app.	approximately
LC ₅₀	Lethal Concentration to 50% of test population
LD ₅₀	Lethal Dose to 50% of test population
IARC:	International Agency for Research on Cancer

Revised: 16-July-2021

SDS No.: EU001

NTP:	National Toxicology Program
NIOSH:	National Institute of Occupational Safety and Health
PAH:	Polycyclic Aromatic Hydrocarbons
STOT-SE:	Specific Target Organ Toxicity –Single Exposure
STOT RE	Specific Target Organ Toxicity –Repeated Exposure
WAF	Water Accommodated Fraction
EC ₅₀	Effective Concentration to 50% of test population
NOEC	No Observed Effect Concentration
E _r L ₅₀	Effective Loading rate that causes growth rate reduction to 50%
NOELR	No Observed Effect Loading Rate
E _b L ₅₀	Effective Loading rate that causes 50% reduction in algal cell biomass
PBT	Persistent, Bioaccumulative, and Toxic
vPvB:	very Persistent and very Bioaccumulative
UN	United Nations
ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID:	Regulations concerning the International Carriage of Dangerous Goods by Rail
ADN:	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG	International Maritime Dangerous Goods
IATA-DGR:	International Air Transport Association Dangerous Goods Regulations
ICAO-TI:	Technical Instructions for the Safe Transport of Dangerous Goods by Air
SVHC:	Substances of Very High Concern

Full text of Classification Hazard Statements:

Hazard Statements	
H228	Flammable solid
H302	Harmful if swallowed
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Classification procedures:

Flam. Sol:	Classification data of constituent substances
Acute Tox. -oral:	Data from similar mixture and bridging principle "Dilution"
Acute tox. -inhalation:	Data from similar mixture and bridging principle "Dilution"
Skin Corr/ Irrit:	Data from similar mixture and bridging principle "Dilution"
Eye Dam/ Irrit:	Data from similar mixture and bridging principle "Dilution"
Skin Sens:	Data from similar mixture and bridging principle "Dilution"
Muta:	On basis of test data of this mixture
Aquatic Acute:	Data from similar mixture and bridging principle "Dilution"
Aquatic Chronic:	Data from similar mixture and bridging principle "Dilution"

Although the information contained in this SDS is prepared to be accurate to the best of our knowledge, please be aware that health and hazard assessment may not be enough and complete.

Since SDS may be revised due to regulation changes or product modifications, please confirm if this is the latest version, especially if the revision date is outdated for two years.

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Toner for KIP 7570

Relevant identified uses: Toner for electrophotographic apparatus

Supplier: KATSURAGAWA ELECTRIC CO., LTD.

Address: 21-1, Shimomaruko 4-Chome, Ota-ku, Tokyo 146-8585, Japan

Telephone number: +81-3-3758-8005

SECTION 2 HAZARDS IDENTIFICATION

2.1 Emergency Overview:

Black fine powder with little or no odor.
Risk of dust-explosion if finely dispersed in air with an ignition source.

2.2 OSHA Regulatory Status:

Classification under GHS: Not classified
GHS Label Elements: None

2.3 Potential Health Effects:

No significant hazards known. See SECTION 11 for details

2.4 Potential Environmental Effects:

The ingredient "Zinc(II) complex salt" is classified as "Aquatic Acute 1" and "Aquatic Chronic 1" (very toxic to aquatic life) by GHS.

This mixture, however, has shown enough test data to be classified out of these hazards.

-See SECTION 12 for details

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Identification of Substance/Mixture: Mixture

Ingredient Name	Weight %	CAS No.
Saturated polyester resin	80-95	Confidential
Carbon Black	1-8	1333-86-4
Wax	1-5	Confidential
Silica	1-5	67762-90-7
Zinc(II) complex salt*	<1.0	42405-40-3

* Zinc, (bis[3,5-di(tert-butyl)-2-hydroxybenzoato-O1, O2], (T-4)

SECTION 4 FIRST AID MEASURES**Inhalation:**

Move to fresh air and gargle with water.

If accompanied with breathing difficulty, take first aid measures such as artificial respiration and call a physician immediately.

Skin contact:

Wash with soap and water.

Eye contact:

Do not rub. Flush with large amount of water until particles are removed.

Seek medical advice

Ingestion:

Rinse mouth. Seek medical advice.

SECTION 5 FIREFIGHTING MEASURES**5.1 Suitable Extinguishing media:**

Water spray or fog, CO₂, dry chemicals

5.2 Unsuitable Extinguishing media:

Strong water current may cause powder to disperse and form explosive dust-air mixture.

5.3 Protection of firefighters

Specific hazards arising from the chemical:

Fine powder may form explosive dust-air mixture if finely dispersed in air.

Fume and smoke may include toxic substances such as aromatic compounds.

Protective equipment and precautions for firefighters

Avoid inhalation of fume and smoke.

SECTION 6 ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures:**

Avoid breathing dust. Dust-proof masks should be worn when working.

6.2 Environmental precautions:

Do not flush into sewer or natural watercourse.

6.3 Methods for containment:

Keep in air-tight container.

6.4 Methods for cleaning up:

Sweep the spilled powder slowly.

Clean the remainder with wet cloth, wet paper, or vacuum cleaner.

Vacuum cleaner must be equipped with dust proof filter and must be explosion-proof.

SECTION 7 HANDLING AND STORAGE**7.1 Precautions for safe handling:**

Avoid breathing dust.

Keep away from ignition sources, especially where dust concentration may become high.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry location away from direct sunlight.

SECTION 8 Exposure controls/personal protection**8.1 Control parameters:**

	OSHA PEL		ACGIH TLV	
	TWA	STEL	TWA	STEL
As toner mixture	15mg/m ³ (Inhalable fraction) 5mg/m ³ (Resipable fraction)	N.E.	10mg/m ³ (Total dust) 3mg/m ³ (Resipable fraction)	N.E.
Carbon black	3.5mg/m ³	N.E.	3.5mg/m ³	N.E.
Silica	6mg/m ³	N.E.	10mg/m ³ (Total dust) 3mg/m ³ (Resipable fraction)	N.E.

(N.E.= Not Established)

8.2 Engineering controls:

Use of local ventilation is recommended.

8.3 Personal protective equipment:

Eye/face protection: Protective goggles is recommended if necessary.
 Skin Protection: Not required
 Respiratory protection: Dust-proof mask should be used when handling bulk.

SECTION 9 Physical and chemical properties**9.1 Information on basic physical and chemical properties:**

Appearance: Black powder
 Odor: Slight odor
 pH: Not applicable
 Melting point: App. 145°C (Flow temperature)
Zinc(II) complex salt 242-244 degree
 Boiling point: No data
 Flash point: No data
 Evaporation rate: No data
 Flammability: Not flammable
Zinc(II) complex salt Highly flammable Flam. Sol. 1
 Explosive limits: No data
 Vapour pressure: Not applicable
 Vapour density: Not applicable
 Relative density: 1.1-1.3
 Solubility: Insoluble to water, partially soluble to toluene and xylene.
Zinc(II) complex salt 187.7mg/l in water, 478mg/100g Fat
 Partition coefficient: Not applicable
Zinc(II) complex salt Log Pow=2.32 at 18 degree
 Auto-ignition temperature: Not applicable
 Decomposition temperature: >200°C
 Viscosity: Not applicable
 Explosive properties: Can form explosive dust-air mixtures
 when finely dispersed in air
 Oxidizing properties: Not applicable
Zinc(II) complex salt Oxidizing substance (Max Burning Rate = 1.98 mm/s)

9.2 Other information:Particle Size: app. 10.0µm (D₅₀)

SECTION 10 Stability and reactivity

10.1 Reactivity:	None
10.2 Possibility of hazardous reactions:	None
10.3 Chemical stability:	Stable
10.4 Conditions to avoid:	None
10.5 Incompatible materials:	None
10.6 Hazardous decomposition products:	No data

SECTION 11 Toxicological information**11.1 Information on toxicological effects:**

Acute toxicity:	Not classified
Inhalation:	LC ₅₀ ; inh-rat>1.45mg/L/4 hours* (maximum achievable concentration)
Ingestion:	LD ₅₀ > 2000mg/kg*
<i>Zinc(II) complex salt:</i>	<i>Acute Tox. 4</i>
<i>Oral:</i>	<i>LD₅₀(Rat): 1,800 mg/kg</i>
<i>Dermal:</i>	<i>LD₅₀(Rat): >2,000 mg/kg</i>
<i>Inhalation:LC₅₀:</i>	<i>Not available</i>
Irritation(Eye/Skin):	Not classified
Corrosivity:	Not available
Sensitisation:	Not classified as a sensitizer*
Carcinogenicity:	Carbon black, contained in this toner, is classified as "group 2B" (possibly carcinogenic to humans) by IARC. However, long-term inhalation test on rats using a toner preparation containing carbon black did not show any carcinogenic effects.
Mutagenicity:	Ames test negative*
Reproductive toxicity:	Not available
STOT –single exposure:	Not available
STOT –RE:	In study of rats exposed to a toner containing carbon black, mild degree of lung fibrosis was observed in groups exposed to high concentration (16mg/m ³) and mid-concentration(4mg/m ³), but no pulmonary change was reported in the group exposed to low concentration(1mg/m ³). In normal conditions of use (in electro-photographic apparatus) maximum concentration of toner released is significantly lower than 1mg/m ³ , and will have no chronic effects to human health. In cases where this product is used in bulk for purpose such as filling, cleaning, etc. of the apparatus, exposure should be controlled with care according to Sections 7 and 8.
Aspiration hazards:	Not available

*data from toner with similar composition

SECTION 12 Ecological information**12.1 Ecotoxicity**

Not classified
Fish(<i>Oryzias latipes</i>): LC ₅₀ (96hr) > 100mg/L (WAF)*
Crustaceans(<i>Daphnia magna</i>): EC ₅₀ (48hr) > 100mg/L (WAF)*
Algae(<i>Pseudokirchneriella subcapitata</i>): E _r L ₅₀ (0-72h)>100 mg/L, NOELR=100mg/L (WAF)*
<i>Zinc(II) complex salt: Aquatic Acute 1</i>

Fish(Oryzias latipes): LC₅₀(96hr): 5.5mg/L

Crustaceans(Daphnia magna): EC₅₀(48hr): 0.73mg/L (NOEL: 0.5mg/l)

Algae(Pseudokirchneriella subcapitata): EbL₅₀(72h): 0.64mg/l, (NOEC: 0.20mg/l)

12.2 Persistence and degradability

Not available

Zinc(II) complex salt: Not readily biodegradable. (15% after 28days)

12.3 Bioaccumulative potential

Not available

Zinc(II) complex salt: Log P_{ow}=2.32; Not suspected to be bioaccumulative.

12.4 Mobility in soil

Not available

12.5 Other adverse effects:

Not available

**data from toner with similar composition.*

SECTION 13 Disposal consideration

Dispose according to local authority requirements.

DO NOT release to sewer or natural watercourse.

DO NOT put toner powder or container into fire.

SECTION 14 Transport information

Basic shipping description

UN number: None

UN proper shipping name: None

Transport hazard class(es): None

Packing group: None

Environmental hazards:

Not classified as environmentally hazardous under UN Model Regulations and marine pollutant under IMDG Code.

Additional information:

Handling such as exposure to water, rolling, falling, or giving shock to the container may result in breakage of the inner bag and result in scattering of the mixture.

Avoid direct sunlight and hot places. (See also: Section 7)

ADR / RID / ADN: not regulated

IMDG Code: not regulated

ICAO-TI / IATA-DGR: not regulated

SECTION 15 Regulatory information

Federal Regulations

TSCA: All ingredients are on the inventory or exempt from listing.

SARA Title III Section 313:

None

State Regulations:

California Proposition 65:

“Carbon black” and “Silica included in this toner are listed, but only airborne, unbound

particles of respirable size are subject to the regulation.
Thus they bound inside toner are not subject to the Proposition.

SECTION 16 Other information

Issued according to GHS 8th revised edition and ANSI Z400.1/Z129.1-2010

Indication of changes:

July 16, 2021: Revised some contents (minor parts)
July 30, 2020: First issued

Abbreviations:

CAS:	Chemical Abstract Service
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
ACGIH:	American Conference of Governmental Industrial Hygienists
TLV:	Threshold Limit Value
TWA:	Time weighted Average
STEL:	Short Term Exposure Limit
LC ₅₀	Lethal Concentration to 50% of test population
LD ₅₀	Lethal Dose to 50% of test population
D ₅₀	volume-based median (50%) Diameter
IARC:	International Agency for Research on Cancer
STOT:	Specific Target Organ Toxicity
STOT RE	Specific Target Organ Toxicity –Repeated Exposure
WAF	Water Accommodated Fraction
EC ₅₀	Effective Concentration to 50% of test population
NOEC	No Observed Effect Concentration
E _r L ₅₀	Effective Loading rate that causes growth rate reduction to 50%
NOELR	No Observed Effect Loading Rate
E _b L ₅₀	Effective Loading rate that causes 50% reduction in algal cell biomass
PBT	Persistent, Bioaccumulative, and Toxic
UN	United Nations
ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID:	Regulations concerning the International Carriage of Dangerous Goods by Rail
ADN:	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG	International Maritime Dangerous Goods
IATA-DGR:	International Air Transport Association Dangerous Goods Regulations
ICAO-TI:	Technical Instructions for the Safe Transport of Dangerous Goods by Air
TSCA:	Toxic Substances Control Act
SNUR:	Significant New Use Rule
SARA:	Superfund Amendments and Reauthorization Act
ANSI:	American National Standard Institute

Although the information contained in this SDS is prepared to be accurate to the best of our knowledge, please be aware that health and hazard assessment may not be enough and complete.

Since SDS may be revised due to regulation changes or product modifications, please confirm if this is the latest version, especially if the revision date is outdated for two years.