

1. Chemical product and enterprise logo

A. Name of product: DS-7409DQN Laminate

B. Recommended use of the product and the limitation on use

- Recommended use : Copper clad laminate for printed circuit boards ANSI : No-ANSI
 Limitation on use : N/A

C. Producer and supplier:

Name of producing company : Doosan Electronics

Address: 661 Yongkang-Ri, Jeungpyung-Eup, Koesan-Kun, Choongchungbuk-Do, South-Korea

Phone: +82-43-820-8461

Department in charge: Production Team

Name of Supplier Company:

Address: 661 Yongkang-Ri, Jeungpyung-Eup, Koesan-Kun, Choongchungbuk-Do, South-Korea

Phone: +82-43-820-8461

Department in charge: Quality Assurance Team

2. Hazard overview

A. Classification of harmfulness. Danger

- Physical danger : N/A
 Health harmfulness : N/A
 Environmental harmfulness : N/A

B. Warning sign items including preventive measures phrases

Pictorial character: N/A

Signal language:: N/A

Harmfulness.danger phrases: N/A

Preventive Measures Phrases

Prevention : Avoid inhaling dust.fume.mist.vapor.spray

Treat only outdoors or in the place of good ventilation

Response : If you inhaled move to the place with fresh air and rest yourself with a posture you can easily breath

If you feel discomfort see your doctor (go to the hospital).

Storage : Preserve the container tightly sealed in the place with good ventilation.

Preserve tightly sealed.

Disposal : Dispose the contents. Container following the details clarified in the related laws.

C. Other harmfulness.danger not included in the criteria of classification of harmfulness.danger

Cas number	Health	Fire	Response
<input type="radio"/> 065997-17-3 :	-	-	-
<input type="radio"/> 007440-50-8 :	1	1	0
<input type="radio"/> Cured resin blend :	-	-	-

3. Ingredient/composition information

Name of chemical	Usual name and other names	CAS Number / Identification number	Content(%)
Glass cloth	-	65997-17-3	25-60
Copper	Copper	7440-50-8	8-28
Cured Resin Blend	-	Proprietary	30-65

4. First-aid measures

A. Eye exposure

In case of eyes contacting chemical, wash it away with large quantity of water for at least 15 minutes.

Move up and down the eyelids occasionally.

In case of chemical getting into the eyes immediately consult a doctor and take medical treatment.

B. Skin exposure

If irritation continues or worsens consult a doctor.

Remove clothes and shoes contaminated by chemicals and wash the wounds with soapy water for more than 15 minutes.

C. Inhalation

If the influence due to exposure appears, move the patient immediately to the area not contaminated and supply fresh air.

In case of no breath conduct artificial respiration and get medical help immediately.
 In case of difficulty in breathing supply oxygen following the direction of doctors.
 In case of inhaling chemicals immediately consult a doctor and take medical treatment.

D. Ingestion

Induce vomiting.
 In case the patient is conscious, supply water or milk of 2 ~ 4 cups.
 If the patient is unconscious prohibit all takings.
 If the patient took or drank chemicals immediately consult a doctor and take medical treatment.

E. The most major symptom/influence of acute and chronic illness

Cough or sore throat when inhaling

F. First aid and the matters that require attention of doctors

Let the medical staffs know of the contaminated situations so that they too can take appropriate protective measures.

5. Fire safety measures

A. Appropriate (inappropriate) fire extinguisher

- Appropriate fire extinguisher Powder fire extinguishing chemicals. Carbon dioxide. Water spray. General foam
- Inappropriate fire extinguisher Water

B. Particular harmfulness generated from chemicals

- Risk of fire and explosion : There is a danger of fire.

C. Protective equipment to put on when extinguishing fire and preventive measures

Put on protective garment which can protect the whole body.

6. Leak Emergency Treatment

A. Measures and protective equipments necessary to protect human body

Take measures of isolation of exposed area and control the access of people except for the concerned persons.
 For future disposal collect and dispose leaked materials to appropriate container.
 Move to the place of good ventilation.
 Follow the OSHA respiration protective equipment regulation (29 CFR 1910.134) or European Standard EN 149.
 Keep distance of radius of more than 25 ~ 50m from the leaking point and control the entry of people except for the concerned persons.
 Put on Self-Contained Breathing Apparatus (SCBA Apparatus)

B. Measures necessary to protect environment

- Atmosphere: No data available
- Earth : No data available
- Under water : No data available

C. Method of purification or removal

- In case of leaking a little amount: N/A
- In case of leaking large amount: Escape at least 50m opposite to the direction of 1st wind.

7. Operation, Disposal and Storage

A. Safe treatment method :

Treat only in the place with good ventilation
 Minimize the generation and accumulation of dust.
 Avoid inhaling of dust and direct skin contact.
 Remove contaminated clothes and wash them before reuse.

B. Method of safe storage :

Avoid direct contact with the air.
 Preserve it in a tightly sealed container
 Avoid contact with mixture-prohibited material
 Store in cool and dry place.
 Store in a place of good ventilation

8. Exposure Control and Individual Protection

A. Standard of exposure of chemicals and biological standard of exposure etc.

- Domestic regulation

	7440-50-8	65997-17-3	Cured Resin Blend
TWA	No data available	No data	No data
STEL	No data available	No data	No data

- ACGIH Regulation

	7440-50-8	65997-17-3	Cured Resin Blend
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TLV-TWA	1 mg/m ³	No data	No data
STEL	No data available	No data	No data
<input type="radio"/> OSHA Regulation			
	7440-50-8	65997-17-3	Cured Resin Blend
TLV-TWA	1 mg/m ³	No data	No data
STEL	No data available	No data	No data
<input type="radio"/> NIOSH Regulation			
	7440-50-8	65997-17-3	Cured Resin Blend
TLV-TWA(10 hours)	1 mg/m ³	No data	No data
STEL	No data available	No data	No data
<input type="radio"/> Biological exposure standard : No data			
B. Appropriate engineering management			
: Install local ventilation apparatus and manage to maintain suitable controlled wind speed.			
Confirm whether the work process is appropriate for allowed standard and exposure standard of the Ministry of Employment and Labor.			
Install sealed facilities or local ventilation apparatus.			
C. Personal Protective Apparatus			
<input type="radio"/> Protection of respiratory organ Put on respiratory protective apparatus certified by Korea Occupational Safety and Health Agency			
<input type="radio"/> Eye protection : Install emergency washing facilities (shower-type) and eyes washing facilities so that the workers can easily use. Put on goggles for chemicals described in eyes, face protection regulation (29 CFR 1910.133) of OSHA or EN166. Put on protective goggle to protect the eyes from scattering materials.			
<input type="radio"/> Hands protection: Put on anti-chemical protective gloves to avoid direct contact of chemicals with the hands.			
<input type="radio"/> Body protection : Put on anti-chemical protective garment which can prevent skin exposure.			

9. Physical and Chemical Properties

Classification	Characteristics		
	7440-50-8	65997-17-3	Cured Resin Blend
A. Appearance	Reddish glossy solid	Liquid, Solid	No data available
B. Smell	No smell	No smell	No data available
C. Smell Value	No data available	No data available	No data available
D. pH	No data available	No data available	No data available
E. Melting point/Freezing point	1083 °C	No data available	No data available
F. Boiling point/boiling point extent	2595 °C	No data available	No data available
G. Flashing point	No data available	No data available	No data available
H. Evaporating rate	No data available	No data available	No data available
I. Flammability (solid, gas)	No data available	No data available	No data available
J. Ignition highest/lowest value	No data available	No data available	No data available
K. Steam pressure	1 at 1628 C	No data available	No data available
L. Solubility	No data available	No data available	No data available
M. Vapor density	No data available	No data available	No data available
N. Specific gravity	No data available	No data available	No data available
O. n-octanol/water distribution coefficient	No data available	No data available	No data available
P. Spontaneous ignition temperature	No data available	No data available	No data available
Q. Decomposition temperature	No data available	No data available	No data available
R. Viscosity	No data available	No data available	No data available
S. Molecular weight	63.546	No data available	No data available

10. Stability and Reactivity

A. Chemical stability :	Stable in normal temperature and pressure
B. Possibility of harmful response :	No polymerization
C. Condition to avoid :	Avoid contact with mixture-prohibited material.

D. Material to avoid : Water
E. Harmful material generated when decomposing No data available

11. Information on toxicity

A. Information on highly possible exposure route

- Inhaling through respiratory organ
: No data
- Taking through the mouth
: No data
- Skin contact
: No data
- Eyes contact
: No data

B. Delayed, acute and chronic influence by short-term and long-term exposure

- Acute toxicity:
 - Through the mouth: No data available within the extent of selected DATABASE
 - Through the skin: No data available within the extent of selected DATABASE
 - Inhaling: No data available within the extent of selected DATABASE
- Skin corrosiveness/ stimulation: No data available within the extent of selected DATABASE
- Severe eyes damage/Stimulation: No data available within the extent of selected DATABASE
- Respiratory organ hypersensitiveness: No data available within the extent of selected DATABASE
- Skin hypersensitiveness: No data available within the extent of selected DATABASE
- Carcinogenicity: No data available within the extent of selected DATABASE
- Reproductive cell mutagenicity: No data available within the extent of selected DATABASE
- Reproductive toxicity: No data available within the extent of selected DATABASE
- Target organ whole body toxicity (1 time exposure) No data available within the extent of selected DATABASE
- Target organ whole body toxicity (repeated exposure) No data available within the extent of selected DATABASE
- Inhalation harmfulness : No data available within the extent of selected DATABASE

C. Numerical measure of toxicity (acute toxicity assumed values) : No data

12. Ecological Information

A. Aquatic and land animal ecological toxicity:

- Fishes : No data available
- Crustacean : No data available
- Algal : No data available

B. Residual and resolvability:

- Residual : No data available
- Resolvability: No data available

C. Living organism biodegradability:

- Biodegradability : No data available
- Biodegradability : No data available

D. Soil mobility:

No data available

E. Other harmful influence:

No data available

13. Waste Disposal

A. Method of disposal

: Dispose the content container following the regulation in case indicated in the waste management law.

B. Matters that require attention when disposing(including the method of disposing contaminated container and packing)

: Please consider the matters that require attention in case indicated in the waste management law.

14. Transport Information

A. UN number : 3089
B. UN optimal shipping name : METAL POWDER, FLAMMABLE, N.O.S.
C. Grade of danger in transportation : 4.1

D. Container grade :

2

E. Marine pollution material :

No data available

F. Special safety measures necessary, or necessary for user to know about the transportation or means of transportation :

- Kinds of emergency measures in case of fire: F-G
 Kinds of emergency measures in case of leaking: S-G

15. Information on Laws and Regulations

A. Regulation by Industry Safety and Health Law : Work environment measurement material (measurement cycle: 6 months)

Management object material

Special health diagnosis material (diagnosis cycle: 12 months)

Exposure standard setting material

B. Regulation by Harmful Chemical Material Management Law :

Not applicable

C. Regulation by Dangerous Material Safety Management Law :

Not applicable

D. Regulation by Waste Management Law :

Designated Waste

E. Other regulation by domestic and foreign laws :

Japan Industrial Safety and Health Law Article 57, paragraph 2 prohibition material : Not applicable

Residual organic pollution material management law: Not applicable

EU Classification Information

- Determined classification result: No data available

- Danger phrase: No data available

- Prevention measure phrase: No data available

US management information

'- OSHA Regulation: Not Applicable

'- CERCLA 103 Regulation (40CFR302.4) : 2267.995 kg 5000 lb

'- EPCRA 302 Regulation (40CFR355.30) : Not Applicable

'- EPCRA 304 Regulation (40CFR355.40) : Not Applicable

'- EPCRA 313 Regulation (40CFR372.65) : Not Applicable

Rotterdam Agreement Material: Not Applicable

Stockholm Agreement material : Not Applicable

Montreal Protocol material : Not Applicable

Glass cloth

A. Regulation by Industry Safety and Health Law :

Not applicable

B. Regulation by Harmful Chemical Material Management Law :

Not applicable

C. Regulation by Dangerous Material Safety Management Law :

Not applicable

D. Regulation by Waste Management Law :

Not applicable

E. Other regulation by domestic and foreign laws :

Residual organic pollution material management law: Not applicable

EU Classification Information

- Determined classification result: No data available

- Danger phrase: No data available

- Prevention measure phrase: No data available

US management information

'- OSHA Regulation: Not Applicable

'- CERCLA 103 Regulation (40CFR302.4) : Not Applicable

'- EPCRA 302 Regulation (40CFR355.30) : Not Applicable

'- EPCRA 304 Regulation (40CFR355.40) : Not Applicable

'- EPCRA 313 Regulation (40CFR372.65) : Not Applicable

Rotterdam Agreement Material: Not Applicable

Stockholm Agreement material : Not Applicable

Montreal Protocol material : Not Applicable

16. Other information

A. Source of the material :

OECD Screening Information Data Set(<http://webnet.oecd.org/hpv/UI/Search.aspx>)

European chemical Substances Information System(ECB-ESIS)(<http://ecb.jrc.it/esis>)

International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>)

National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)

National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>)

International Chemical Safety Cards
(ICSC)(<http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/index.htm>)
National Emergency Management Agency(<http://www.nema.kr/hazmat/main/main.jsp>)
Chemical Substances Hazard Assessment Report/Initial Risk Assessment
Report(http://www.safe.nite.go.jp/english/sougou/view/TotalSrchInput_en.faces)
NITE(http://www.safe.nite.go.jp/ghs/h18_list.html)
The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ecotox/quick_query.htm)
Akron University(<http://ull.chemistry.uakron.edu/erd/>)
Emergency Response Guidebook(2008)
International Agency for Research on cancer(IARC)(<http://monographs.iarc.fr/ENG/Classification/index.php>)

B. The first date of making : Dec 15, 2022

C. Number of Amendment and the last date of amendment : 1 / Nov 17, 2025

D. Others

The contents of this material cannot be modified arbitrarily or used in commercial purpose.