

## Test Report

No. : CE/2011/55959 Date : 2011/06/03 Page : 1 of 7

HIROSE ELECTRIC CO., LTD.  
7-3-13, KIKUNA, KOHOKU-KU, YOKOHAMA 222-8566, JAPAN



The following sample(s) was/were submitted and identified by/on behalf of the client as:

Sample Description : RESIN  
Style/Item No. : SUPPLIER: Not to declare  
PRODUCT NAME: Not to declare  
Color Type : BLACK  
Sample Receiving Date : 2011/05/30  
Testing Period : 2011/05/30 TO 2011/06/03

Test Result(s) : Please refer to next page(s).

  
Chenyu Kung / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory – Taipei

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## Test Result(s)

PART NAME No.1 : BLACK PLASTIC PELLETS

Test Item (s):	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
<b>Sum of PBBs</b>	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
<b>Sum of PBDEs</b>			-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether			5	n.d.
Pentabromodiphenyl ether			5	n.d.
Hexabromodiphenyl ether			5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether			5	n.d.
Nonabromodiphenyl ether	5	n.d.		
Decabromodiphenyl ether	5	n.d.		

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Test Item (s):	Unit	Method	MDL	Result
				No.1
<b>Halogen</b>				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)			50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.

**Note :**

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

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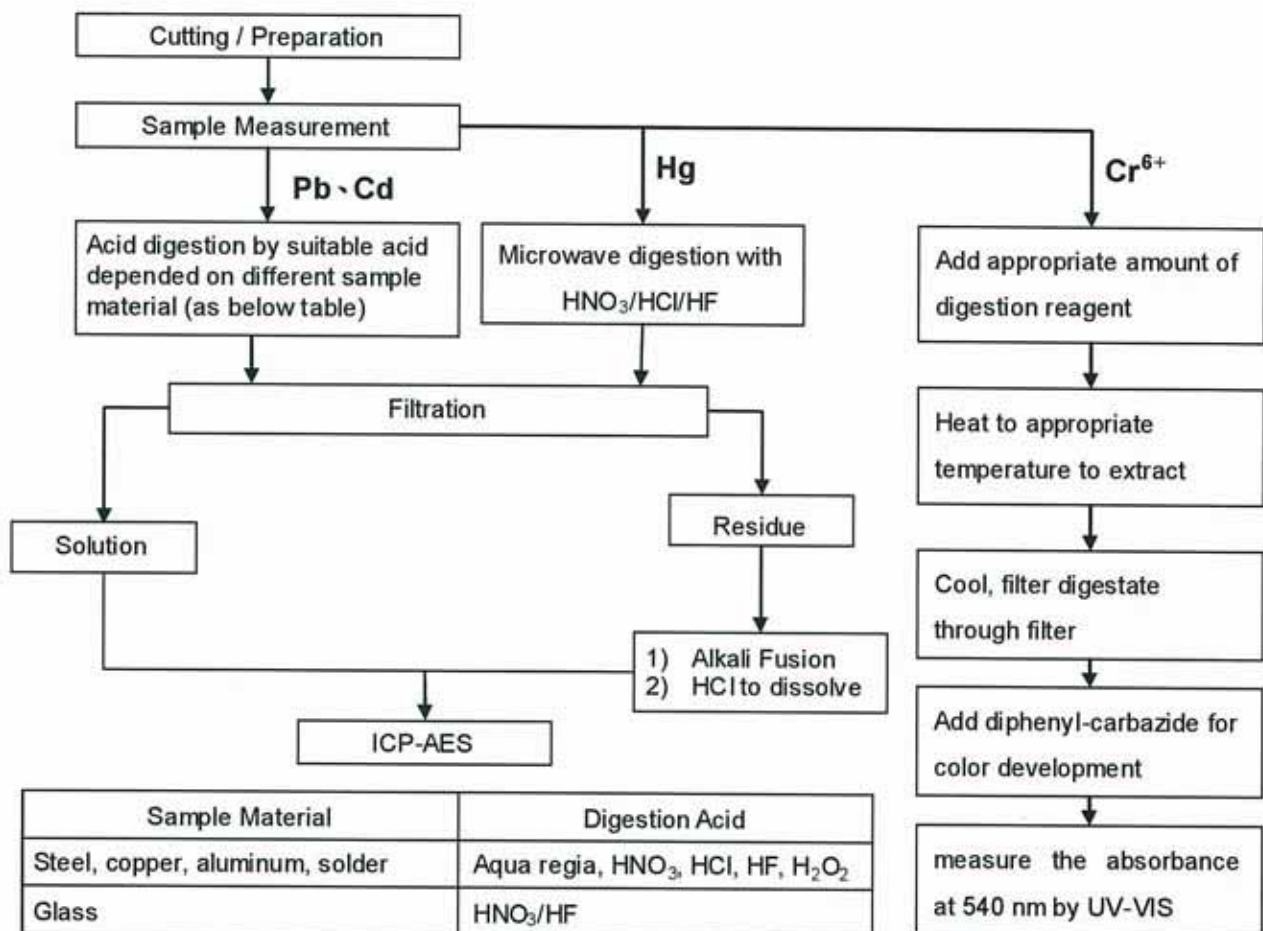
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
Glass	HNO <sub>3</sub> /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO <sub>3</sub>
Plastic	H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
Others	Any acid to total digestion

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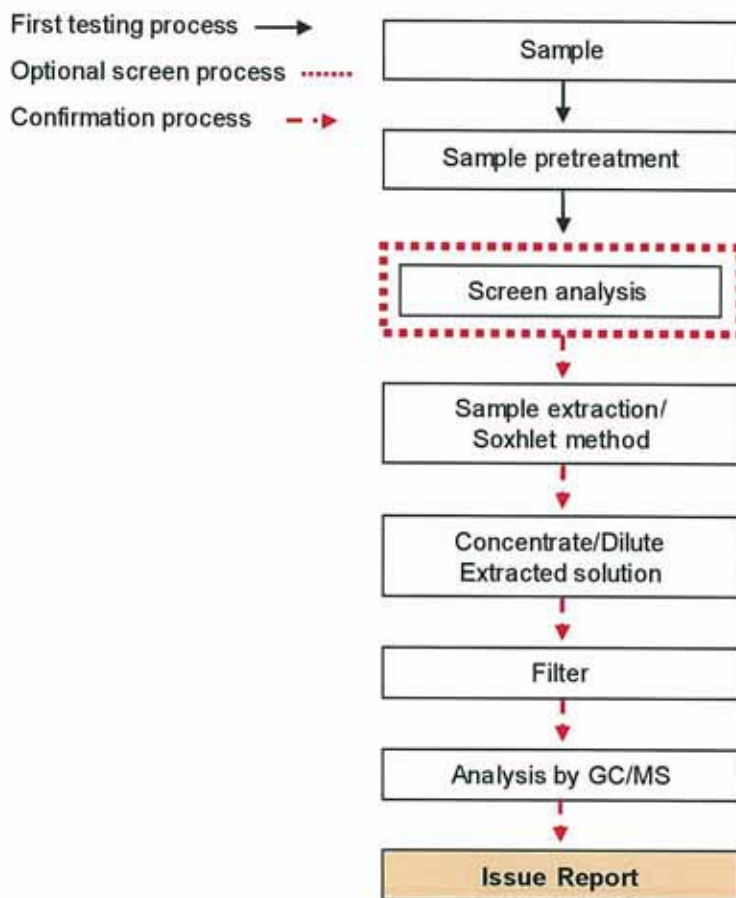
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### PBB/PBDE analytical FLOW CHART

- 1) Name of the person who made measurement: Roman Wong
- 2) Name of the person in charge of measurement: Troy Chang



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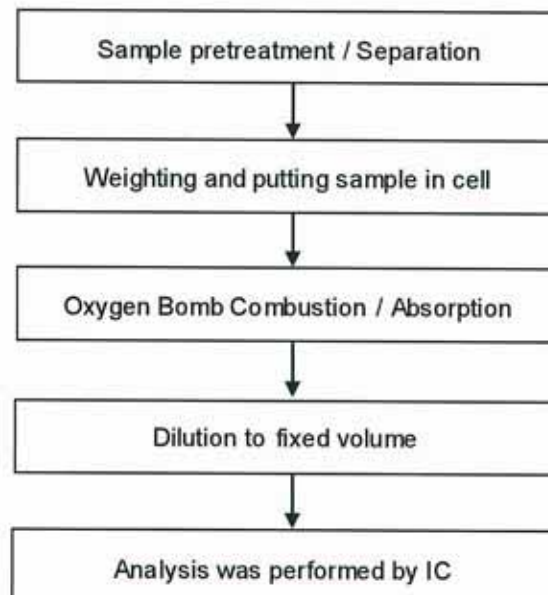
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## Analytical flow chart of halogen content

- 1) Name of the person who made measurement: Rita Chen
- 2) Name of the person in charge of measurement: Troy Chang



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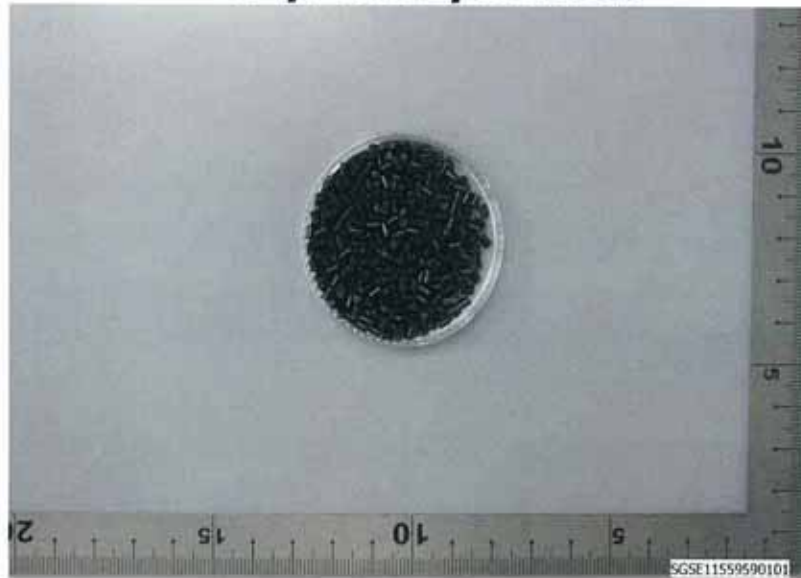
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### CE/2011/55959



**\*\* End of Report \*\***

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## Material Safety Data Sheet

### 1. Chemical Product and Company Identification

Product name : Not to declare

Name of supplier : Not to declare

Address : Not to declare

Sales Department : Not to declare

Manager of Sales Department : Not to declare

Telephone number : Not to declare

FAX number : Not to declare

Technical Department : Not to declare

Manager of Technical Department : Not to declare

Phone No. : Not to declare

Product No.(MSDS No.) : Not to declare

### 2. Composition/Information on Ingredients

Chemical name :

Poly(hexamethylene adipamide) Resin

Synonyms : Polyamide-66 resin, Nylon-66 resin

Substance/Mixture : Mixture

Common chemical name

Poly(hexamethylene adipamide)

Composition : -

Chemical formula(Constitutional/Structural formula)

$[C_{12}H_{22}N_2O_2]_n$

CAS No. : 32131-17-2

TSCA : Regd.

Common chemical name

Poly(epsilon-caproamide/hexamethylene adipamide)copolymer

Composition : -

Chemical formula(Constitutional/Structural formula)

$(NH(CH_2)_5CO)_m(NH(CH_2)_6NHCO(CH_2)_4CO)_n$

CAS No. : 24933-04-2

TSCA : Regd.

Common chemical name

Flame retarder

Composition : -

CAS No. : confidential

TSCA : Regd.

Components contributing to the hazard :

N.A.

### 3. Hazards Identification

Adverse human health effects :

Do not use this material for implant articles.

Environmental effects :

There is not the environment influence that should describe.

Physical and Chemical hazards :

R10-Flammable.



Class name of hazardous chemicals for MSDS in Japan :

It does not belong to the classification of dangerous harmful nature.  
It does not correspond to the classification standard.

#### 4. First-Aid Measures

Inhalation :

S45-In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Remove the victim from the contamination immediately to fresh air.

Inhale the gas that occurs from the molten polymer and transfer it in the place of fresh air right away in the case that the mood became bad and wait for recovery.

In case that it does not recover we receive the diagnosis of the physician.

Skin contact :

If a person touches the molten polymer, cool the affected part with fresh water. Do not try to remove the polymer by force and see a doctor if the person got burnt.

Eye contact :

Gently rinse the affected eyes with clean water for at least 15 minutes. Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.

Have the victim remove contact lenses if he is wearing them and continue rinsing.

Do not let the victim rub his eyes.

Ingestion :

S45-In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Rinse mouth with water. Give the person one or two glasses of water, try to get the victim to vomit by having the victim touch the back of their with a finger.

#### 5. Fire-Fighting Measures

Extinguishing Media :

S43-In case of fire, use water mist, water jet, foam, dry powder, CO2,

Specific Hazards with regard to Fire-Fighting Measures :

S41-In case of fire and/or explosion do not breathe fumes.

Toxic gases will form upon combustion of :

carbon monoxide,

acetaldehyde, a small quantity of HCN etc.

Fires involving this material produce large amounts of sooty smoke.

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Specific fire-fighting measures :

Apply water from a safe distance to cool and protect surrounding area.

Keep personnel removed from and upwind of fire.

Evacuate non-essential personnel to safe area.

Protection of fire-fighters :

Firefighters should wear proper protective equipment.

#### 6. Accidental Release Measures

Measures for Handling Personnel :

Pellets on road or floor may cause a person to fall down.

Measures for environmental effects :

Do not wash away into shower or waterway.

If pellets got released in environment, take adequate steps to prevent aquatic animals and birds dying from eating pellets.

Measures when handling spilled substances :

Sweep up, place in an bag and hold for waste disposal.

Preventive measures for secondary accident :

Shut off all sources of ignition; No flairs, smoking or flames in area.

## 7. Handling and Storage

### Handling :

#### Preventive measures :

##### Exposure control for handling personnel :

S21-When using do not smoke.

S22-Do not breathe dust.

S23-Do not breathe

gas

fumes

S51-Use only in the well-ventilated areas.

Avoid to use fire in the neighborhood.

Do not keep inhale the gas and fumes generated during molding.

Do not touch hot resin without protector.

Do not keep this material under high temperature condition for a long time.

Plastics pelles are easily electrified, so take countermeasures to eliminate static electricity if necessary.

##### Protective measures against fire & explosion :

Take the prevention measure to a mine dust explosion in the case that mine dust occurred by secondary processing.

##### Safety treatments :

Good general ventilation should be sufficient for most conditions.

##### Safety Measures/Incompatibility :

Protect against physical damage.

Do not drop onto, or slide across sharp objects.

Avoid rough handling or dropping.

### Storage :

#### Recommendation for storage :

This material is flammable. Follow the local law and regulations of storage.

#### Incompatible storage condition :

S15-Keep away from heat.

S16-Keep away from sources of ignition -No smoking.

Separating it from a heat source, steam pipe, direct ray it stores in the cool place.

## 8. Exposure Control/Personal Protection

### Engineering measures :

When Processing, partial ventilation is desirable to eliminate generated gas and dust.

### Personal protective equipment :

#### Respiratory protection :

S38-In case of insufficient ventilation, wear suitable respiratory equipment.

Against powder-dust:protective mask for dust

Against gas from molten resin:protective mask for organic gas and dust

#### Hand protection :

S37-Wear suitable gloves.

#### Eye protection :

Wear protective eyeglasses or chemical safety goggles.

#### Skin and body protection :

S36-Wear suitable protective clothing.

### Safety and Health measures :

Wash hands before breaks and at the end of work.

Do not eat, drink or smoke at work.

## 9. Physical and Chemical Properties

### Physical properties :

Appearance : solid pellet

Odor : None

Phase change temperature :  
Boiling point : None  
Melting point : 265°C  
Flash point : Not Available  
Ignition temperature : >400°C  
Explosion : Not Available  
Vapour pressure : None  
Vapour density : None  
Density : 1170kg/m<sup>3</sup>

#### 10. Stability and Reactivity

##### Stability :

This product is considered a stable material under normal and anticipated storage and handling conditions.

#### 11. Toxicological Information

##### Acute toxicity :

N.A.

##### Effects on skin, eyes and others :

Gas generated during drying or molding is irritative to eyes.

##### Allergenic and/or sensitizing effects :

N.A.

##### Chronic and/or long term toxicity :

N.A.

##### Carcinogenic effects :

N.A.

##### Mutagenic effects :

N.A.

##### Teratogenic effects :

N.A.

#### 12. Ecological Information

##### Biodegradability :

N.A.

##### Bioaccumulation :

N.A.

##### Fish toxicity :

N.A.

#### 13. Disposal Consideration

Dispose to an authorized waste collection point.

Follow the local law and regulations of waste disposal and prevention against public nuisance.

#### 14. Transport Information

##### Specific safety measures and conditions on transport :

Covering is necessary for shutting off sunlight and rain. Handle gently to avoid damaging bags. Caution for slipping by the scattered pellets.

#### 15. Regulatory Information

UL94 V-0

##### Other regulatory information :

We are not able to check up the regulatory information in regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

#### 16. Other Information/References

**Other information :**

The information relates to this specific material. It may not be valid for this material, if used in combination with any other materials or in any process. It is the user's responsibility to satisfy him-selves as to the suitability and completeness of this information for his own particular use.

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