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	()		DF22R-3P-7.92DS(05)			
Code	DJ58	Code	-			
			07.04.19	憲 靜	炯 泰	在 換
	031-496-7044	E-mail	heejung@hirose.co.kr			
	1261-10			04/19	04/19	04/19

2.

				Data		
		有	無			
Class						
	6가					
	Polybrominated biphenyls (PBBs) Polybrominated diphenylethers (PBDEs)					
Class	Polychlorinated biphenyls (PCBs) Polychlorinated Terphenyls (PCTs) Polychlorinated naphthalences (PCNs)					
	Ozone depleting substances (CFCs, HCFCs, Halons)					
	Short-chain chlorinated paraffins (Alkane 10~13 Carbon chain)					
Class	PVC ()					
	(Other chlorinated flame retardants)					
	(ex, TBBP-A) (Other brominated flame retardants)					

3.

- (O)
- Data : Class (ex : ICP, GC-MS)
- : Class Data (ex : MSDS, Mil Sheet)
- : Class Spec

Data

(Code No) : DJ58




: 2007 . 04 . 19 .

No	Code	가	CAS-No	(ppm = mg/kg)						
				Cd	Pb	Hg	Cr ⁺⁶	PBBs	PBDEs	
1	DF22R-3P-7.92DS(05)	-	CASE PA CM3004G -15 TORAY	32132-17-2 7631-86-9 1309-64-4	N.D	53	N.D	6	N.D	N.D
			DS DK-3	7723-14-0 7440-31-5 7440-02-0 7439-89-6 7440-50-8	N.D	11	N.D	N.D	-	-



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: (,) : 2007 . 04. 19.

					()		
					()		
				E-mail	cha-jh@hirose.co.kr		
							
							

: DF22R-3P-7.92DS(05) : ()
 Code N : :
 :

				가			
	Maker		Type	Maker		Type	
CASE	TORAY	CM3004 G-15	PA66				
DS		DK-3					

- 가 Data , (Mil Sheet, MSDS) .
 (, .)
 - Sample 時 , Data,
 時 .

検査結果報告書

ヒロセ電機株式会社 殿

発行No. 33907505-01M-001 1/1

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測定日 平成18年 8月 3日

受付日 平成18年 7月 28日

件名: RoHS/ELV指令 化学物質の分析

日本環境株式会社 中央研究所

神奈川県横浜市金沢区善通寺2-1-13

TEL 043 (785) 1381

計量証明事業所 神奈川県 横浜 金沢区 善通寺 2-1-13

中央研究所 代表取締役 谷 義治

検査担当 行谷 義治



ご依頼を受けました試料について、検査の結果を次の通り報告いたします。

試料名称	CM3004G-30 BLACK (A420701)	定 量 下 限 値	単 位	検 査 の 方 法
検 査 項 目	検 査 の 結 果			
カドミウム	N.D.	1	ppm	EPA3052法準拠 マイクロウェーブ分解-ICP-MS法
鉛	53	10	ppm	EPA3052法準拠 マイクロウェーブ分解-ICP-MS法
水銀	N.D.	1	ppm	EPA3052法準拠 マイクロウェーブ分解-ICP-MS法
総クロム	6	1	ppm	EPA3052法準拠 マイクロウェーブ分解-ICP-MS法
ポリ臭化ジフェニル類(PBBs)	N.D.	10	ppm	溶媒抽出 - GC/MS法
ポリ臭化ジフェニルエーテル類(PBDEs)	N.D.	10	ppm	溶媒抽出 - GC/MS法
ヘキサ臭化ジフェニルエーテル	N.D.	10	ppm	溶媒抽出 - GC/MS法
オクタ臭化ジフェニルエーテル	N.D.	10	ppm	溶媒抽出 - GC/MS法
デカ臭化ジフェニルエーテル	N.D.	10	ppm	溶媒抽出 - GC/MS法
(以下余白)				
測定装置) ICP-MS; Agilent Technologies 製 Agilent 7500c GC/MS; PerkinElmer 製 Clarus500 GCMS				
備考) カドミウムおよび鉛の前処理において、測定に供した試料は完全に溶解されました。 表中のN.D.は定量下限値未満を示します。 PBBs、PBDEsはモノ〜デカの合計量を示します。				

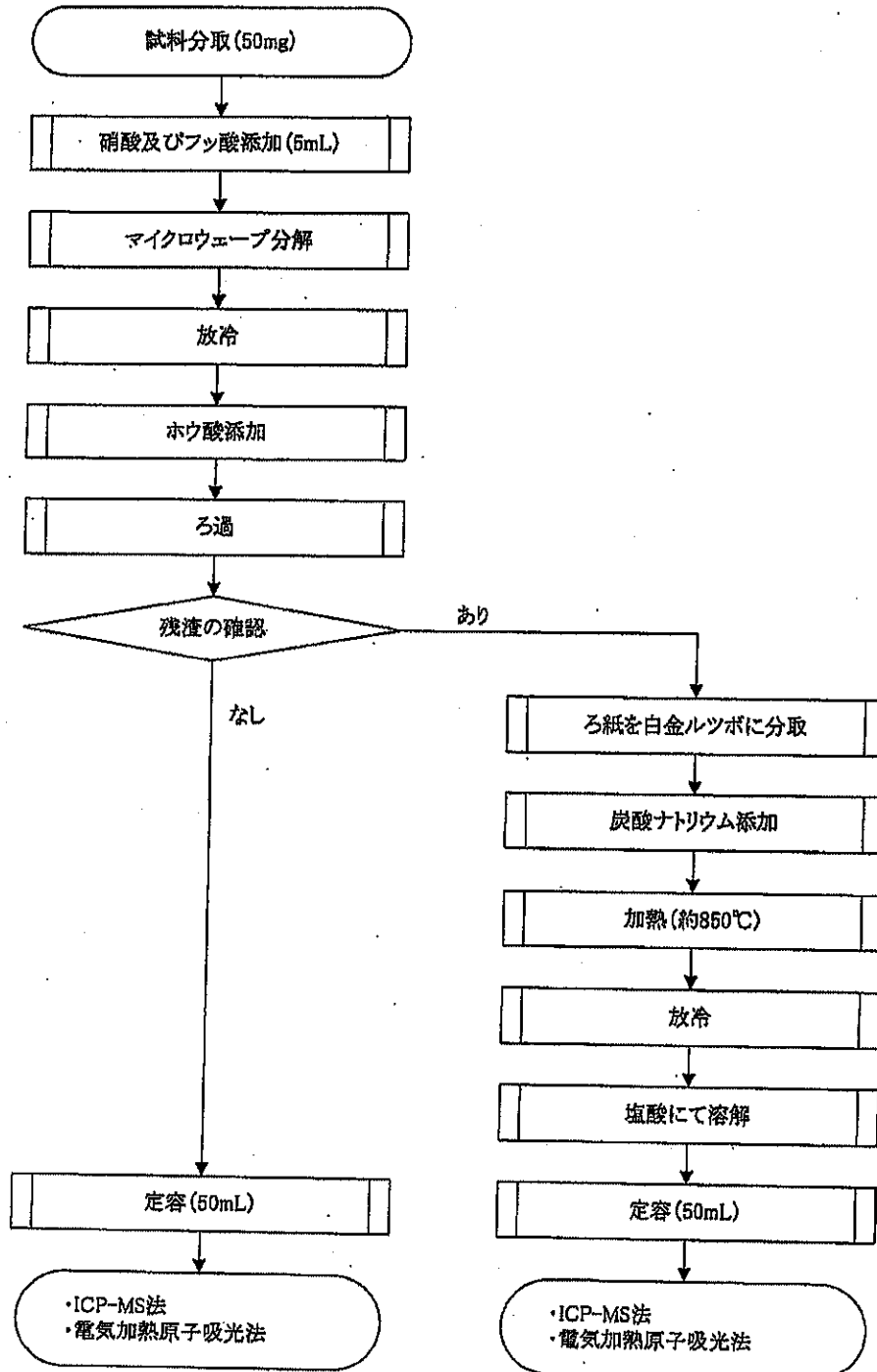
結果は依頼主より受け取った検査品目に限定したものととなります。

CM3004G-15 } 適用
CM3004G-20 } 適用

1/2

プラスチック中のカドミウム、鉛の分析フローチャート

日本環境株式会社 中央研究所
神奈川県横浜市金沢区幸浦2-1-13
TEL 045 (780) 3831



※結果はろ液と残渣の合計量となります。

Material Safety Data Sheet

1. Chemical Product and Company Identification

Product name : Toray Amilan Nylon Resin CM3004G30
CM3004G15, CM3004G20, CM3004G25,
CM3004G15A, CM3004G20A, CM3004G25A, CM3004G30A,
CM3004G30FA, CM3004G20F0001

Name of supplier : Toray Industries , Inc.

Address :

2-1, NIHONBASHI-MUROMACHI 2-CHOME, CHUO-KU, TOKYO 103 JAPAN

Sales Department :

Nylon Polymers Dept. , Automotive Products Dept.

Manager of Sales Department : General Manager

Telephone number : +81-3-3245-5500; +81-3-3245-5495

FAX number : +81-3-3245-5068; +81-3-3245-5498

Technical Department :

Plastics Technology Dept.

Manager of Technical Department : General Manager

Phone No. : +81-52-613-5245

Product No. (MSDS No.) : D3E-RN3451-5

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. : 32132-17-2

TSCA : Regd.

Common chemical name

Almino bolo silicate glass

Composition : -

Chemical formula (Constitutional/Structural formula)

$SiO_2 \cdot Al_2O_3 \cdot CaO \cdot MgO \cdot B_2O_3 \cdot Na_2O \cdot K_2O$

CAS No. : 7631-86-9

TSCA : Regd.

Common chemical name

Antimony Trioxide

Composition : -

Chemical formula (Constitutional/Structural formula)

Sb_2O_3

CAS No. : 1309-64-4

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 :
There is not the information that should describe.

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 flaers, 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 coutermeasures 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

Color : Beige

Odor : Characteristic odor

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 : 1470-1590kg/m3

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

International guide line :

No information available

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.

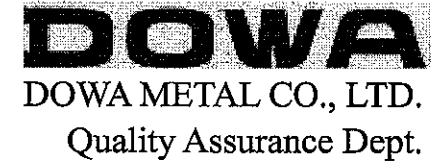
16. Other Information/References

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.

The information herein is given in good faith, but no warranty, express or implied, is made. Please consult us for further information.

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own tests to determinate the safety and suitability of each such product or combination for their own purposes.



DOWA Material Analysis Report

1. Testing sample

NB-109R, DK-3R

2. Chemical analysis (Unit : ppm)

Measurement organization: DOWA METAL CO., LTD.

Device: Inductively Coupled Plasma Spectrometer (RIGAKU CIROS-120)

Measure Date: Jan.10.2007

	Cd	Pb	Hg	Cr(Cr ⁶⁺)	PBB,PBDE
NB-109	N.D.	12.8	N.D.	N.D.	-*
DK-3	N.D.	11.0	N.D.	N.D.	-*
Detection limit	0.1	4	100	20	-

N.D. : Not Detected

*DOWA material do not contain PBB, PBDE at all, because of pure metal.

3. Result

Pb,Cd is included as inevitable impurities in the raw material of our product cast. It causes a result that Pb is slightly detected. However, all the above-hazardous substances are not intentionally added in our manufacturing process.

1/2

CONTROL No. :

DATE :

APPROVED	VERIFIED	PREPARED
K. Iwamoto	H. Honda	Y. Obita

MATERIAL SAFETY DATA SHEET

Product name	DK3	Application	Water release 1. necessary to treat (2) None		
Manufacturer	DOWA METAL CO., LTD		PHONE 001-81-539-62-3131 FAX 001-81-539-62-3996		
Address	767 Matsunokijima, Iwata-shi, Shizuoka prefecture, Japan				
Business Office	DOWA MINING CO., LTD Metal processing Division		PHONE 001-81-3-3201-1012 FAX 001-81-3-3201-1019		
Address	1-8-2 Marunouchi, Chiyoda District, Tokyo, JAPAN				
COMPOSITION			HARM TO HEALTH		
Chemical name	WT%	Threshold concentration	LD50	Skin Irritation	Carcinogenicity
P	0.06	/	/	/	/
Sn	0.06				
Ni	0.15				
Fe	0.20				
Cu	99.53				
As product	100				
FIRE AND EXPLOSION HAZARD			TOXICOLOGY		
1. Flammable or explosive. 2. Pyrophoric or exothermic when contacting () 3. With fear of spitting. 4. Dust explosive. 5. Others () ⑥ No hazard.			1. Skin is irritated if contacting with. 2. Skin is injured if contacting with. 3. Eyes are irritated if contacting with. ④ Eyesight may lose if contacting with 6. Inhalation results irritation to the throat, upper respiratory tract. 6. Inhalation causes headache, vertigo. 7. Anesthesia may be caused by inhalation. 8. Poison is caused by inhalation. 9. Poison is caused by drinking. 10. Others () 11. No harm.		
CONCERNED LAWS (including the regulations issued by the Ministry of Labor)					
The law of labor safety and health					
1. The regulation for preventing the poison of organic solvent. the () categories. Name of material () 2. The regulation for preventing defect from specified chemical materials. The () kind. Name of material () 3. Regulation for preventing lead poison. 4. No. 477 regulation issued by The Ministry of Labor in 1974, titled preventing health defect from stiffener of epoxy resin. 5. No. 60 notification issued by The Ministry of Labor in 1992 titled guideline for indication of the hazard and harms of chemical materials. 6. Other Regulations, notifications. () ⑦ No concerned.					
Fire Law					
1. The () category hazard substance, name () category, Property (non-aqueous, aqueous) the registration number of data base () 2. Specified combustible substance, name () category, 3. Other () ④ No concerned.					

Other laws
 1. The law of control on high pressure gas.
 2. Specifically controlled industrial waste defined in the law of waste disposal.
 (a. Waste oil b. Waste alkali c. Waste acid d. Others())
 3. The law of control on poisonous and drastic substances.
 (a. Poisonous substance b. Drastic substance (composition()))
 4. Others () (2) No concerned.

PHYSICAL PROPERTIES

Specific gravity	8.8	Melting point	1083°C	boiling point	—	flaming point	—
Igniting point	—	Vapor density	—	explosion range	—	pH	—
SHAPE	1. Liquid 2. Gas (pressure) 3. Powder (particle size) (4) Solid 5. Others()						

PRECAUTIONS FOR HANDLING
 1. Handle in well ventilated places. (2) Use protective equipment ((3) Gloves b. Apron c. Mask d. Goggles e. Others())
 3. Run local ventilation fan
 4. Fire prohibited 5. Water prohibited.
 6. Avoid collisions 7. Use protective cream.
 8. Others() 9. None.

PRECAUTIONS FOR HANDLING
 1. Ventilate. 2. Avoid storing together with other substances.
 3. Set lightning rod. 4. Store at cool places.
 5. Store at cool and dark places. 6. Lock up.
 7. Avoid direct sunlight. 8. Fear of auto ignition.
 (3) Others (keep away from acid and alkali substance) 10. None.

FIRE FIGHTING
 1. Fear of generation of harmful gas. () 2. Fear of explosion.
 3. Pouring water prohibited. 4. Others.()
 5. Extinguishing media (a. Water b. Carbonic acid gas c. Powder extinguisher)
 (d. Bubble extinguisher e. Water spray f. Earth and sand)
 (g. Others())
 (3) None.

SPILL AND LEAKAGE PROCEDURES
 1. Absorb with (a. Waste cloth b. Dry sand c. Sawdust d. Others())
 2. Collect with vacuum. 3. Neutralize with()
 4. Fire prohibited. 5. Avoid pouring water.
 6. Handle with care because of harm. 7. Others. ()
 (3) None.

FIRST AID
 1. On occasion adhering to the body
 (a. Wash with water b. Wash with soap c. Others() (4) Nothing necessary)
 2. On occasion adhering eyes
 (a. Flush eyes for() minutes (b) Others (calling a physician) a. Nothing necessary)
 3. On occasion being drunk
 (a. Spit out b. Do not spit out c. Rinse the mouth (4) Others (call a physician)
 (c. Nothing necessary)
 4. On occasion being inhaled
 (a. Move to fresh air and rest b. Keep warm (3) Others (call physician)
 (c. Nothing necessary)

WASTE DISPOSE
 1. Send to waste treatment dealer (a. Burn b. Neutralize with() c. Others())
 2. Drainage treatment (condense and sediment; treat biologically)
 3. Return to the manufacturer.
 (4) May be recycled.
 5. Others()