2008年 09月 25日

環境關理 物質 不使用 證明書

會社名 : 히로세코리아(주)
部　署 : 품질경영팀
責任者 : 차 재환 차장

貴社에 販賣하는 製品 및　製品의 使用材料, 包裝材, 製造工程에 含有되는 添加劑 等에 對하여 貴社가 要求하는 管理水準 (使用禁止對象)의 物質을 使用하고 있지 않음을 證明합니다.

當社의 製品 및 製品의 使用材料, 包裝材, 製造工程에 含有되는 添加劑 等에 對하여 以下의 成分으로 構成되어 있음을 報告 합니다.

(1) 製品 使用素材

NO	제품명	부품명	원자재명	원자재 MAKER	비 고
1	PCN10A-32P-2.54DS	MOLD	PBT 7377W	WINTECH POLYMER	
2	PCN10A-44P-2.54DS	PIN	C2680R	풍산	

(2) 測定可能物質의 ICP Data는 別紙 參照 要望

(3) 測定可能物質의 成分 分析 Data는 別紙 參照 要望

以 上

TEST REPORT

Client: Hirose Electric Co., Ltd.

Report No.: 34910361-01M – 001 1/1
Date Issued: 31/Oct/2007
Date Tested: 30/Oct/2007
Sample Receiving Date : 24/Oct/2007

Subject : Analysis for RoHS/ELV Directive

Authorized by Yoshiharu Nanagawa
Manager of Central Research Laboratory
NIHON ENVIRONMENTAL SERVICES CO., LTD.
2-1-13, Sachiura, Kanazawa-ku, Yokohama-shi,
Kanagawa-ken, JAPAN
TEL +81-45 (780) 3831
Tested by Miyuki Tonegawa

RESULTS ARE REPORTED AS FOLLOWS

Sample Name	7377W Beige WinTech Polymer			
Test Item	Results	Quantitation Limit	Unit	Test Method
Cadmium	N.D.	1	ppm	EPA Method 3052 Microwave digestion - ICP-MS method
Lead	23	10	ppm	EPA Method 3052 Microwave digestion - ICP-MS method
Mercury	N.D.	1	ppm	EPA Method 3052 Microwave digestion - ICP-MS method
Total Chromium	N.D.	10	ppm	EPA Method 3052 Microwave digestion - ICP-MS method
Polybrominated biphenyls(PBBs)	N.D.	10	ppm	Solvent extraction-GC/MS method
Monobrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Dibrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Tribrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Tetrabrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Pentabrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Hexabrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Heptabrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Octabrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Nonabrominated biphenyls	N.D.	10	ppm	Solvent extraction-GC/MS method
Decabrominated biphenyl	N.D.	10	ppm	Solvent extraction-GC/MS method
Polybrominated diphenyl ethers(PBDEs)	N.D.	10	ppm	Solvent extraction-GC/MS method
Monobrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Dibrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Tribrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Tetrabrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Pentabrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Hexabrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Heptabrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Octabrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Nonabrominated diphenyl ethers	N.D.	10	ppm	Solvent extraction-GC/MS method
Decabrominated diphenyl ether	N.D.	10	ppm	Solvent extraction-GC/MS method
(End of report)				

Instruments: ICP-MS; Agilent Technologies, Agilent 7500ce
GC/MS; PerkinElmer, Clarus500 GCMS

Note: Sample for Cadmium and Lead is totally dissolved.
N.D. = Not Detected (Less than Quantitation Limit)

PBBs & PBDEs presents total amount of all Brominated diphenyl ethers.

- GB No.R2270087
- All Color
- DP-089875-3-11-09
- Lot.No.01,08,09

The results relate only to the items tested.

MATERIAL SAFETY DATA SHEET (MSDS)

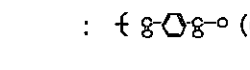
Issued: Apr 1 , 2002
Revised: May 28 , 2002

File No. 2102-1

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

CHEMICAL PRODUCT NAME :	DURANEX 7377W
NAME OF COMPANY :	WinTech Polymer Ltd.
SECTION IN CHARGE :	Quality Assurance Dept.
ADDRESS :	3-2-5 Kasumigaseki, Chiyoda-ku, Tokyo
TELEPHONE NUMBER :	03-3593-2280
FACSIMILE NUMBER :	03-3593-2189

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE/PREPARATION :	Preparation
COMMON CHEMICAL NAME :	Polybutyleneterephthalate
SYNONYMS :	Polybutyleneterephthalate(PBT)
INGREDIENTS AND COMPOSITION :	PBT≧40%, Antimony compound ≦5%, Glass fibers,Flame retardant and others ≦55%
CHEMICAL FORMURA :	
SERIAL № IN OFFICIAL GAZETTE :	7-1039(base resin) (Law Concerning Examination and Regulation of Manufacture,etc.,of Chemical Substances)
CAS № :	24968−12−5(base resin)

3. HAZARDS IDENTIFICATION

PHYSICAL AND CHEMICAL HAZARDS :	Not applicable
HUMAN HEALTH EFFECTS :	Not applicable
ENVIRONMENTAL EFFECTS :	Not applicable
PHYSICAL AND CHEMICAL HAZARDS :	It is inflammable substance and combustible if an igniting source is existent. Neither dangerous reaction,fire nor explosion can be caused under normal conditions.
THE CLASSIFICATION :	Not applicable

4. FIRST-AID MEASURES

INGESTION :	Help to vomit as much as possible. If sick feeling continues,and ask a physician for advice.
INHALATION :	When a gas generated from the molten polymer,especially fume generated during combustion or heat, has been inhaled,remove fresh air without delay and wait until the victim is recovered. If sick feeling continues,ask a physician for advice.
SKIN CONTACT :	Cool the contacted skin with clean water without delay,if a contact with the polymer In a molten form, Do not force to remove the solid resin on the skin. If any burns are observed on the skin,ask a physician for advice.

EYE CONTACT	:	Cool and rinse the eye with clean water for at least 15 minutes when the eyes had contact with molten polymer. In case of wearing contact lenses,remove the lenses as soon as possible,and ask a physician for advice. When the eye had contact with the polymer in an ordinary solid form,rinse the eye with clean water without delay. If the discomfort persists,ask a physician for advice.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA	:	Water,form fire-extinguishing agent,powder fire-extinguishing agent,and carbon dioxide gas.
SPECIFIC METHODS	:	Extinguish the fire with water. A method of extinguishing an ordinary fire may be applied. Do not apply water directly to processing machines.
SPECIFIC HAZARDS	:	Incomplete combustion leads to generation of toxic gases such as carbon monoxide or tetrahydrofuran,in addition to carbonic acid gas and water.
SPECIAL EQUIPMENT FOR THE PROTECTION OF FIREFIGHTERS	:	In case the fire gained force,use a gas mask or other protective equipment.

6. ACCIDENTAL LEAKAGE MEASURES

PERSONAL PRECAUTIONS	:	When pellets were spilled on the road or floor,wipe them off with a besom or cleaner not to cause slipping.
ENVIRONMENTAL PRECAUSION	:	Handle the spillage in accordance with provisions given in the "Resin pellet spillage preventive manual",in order to prevent intakes by marine animals and birds.

7. HANDLING AND STORAGE

HANDLING	:	This resin in a pellet form will neither ignite nor explode at room temperatures.
HANDLING 2	:	For molding work,effective means for local exhaust are required to discharge gases generated by melt processing.
HANDLING 3	:	Avoid inhaling of gases generated in moulding work. Do not directly touch resin of high temperature.
HANDLING 4	:	Avoid retaining hot resin in the processing machines for many hours.
HANDLING 5	:	This pellets spilled on the floor are likely to cause slipping. Remove such spillage at any times.

HANDLING 6	:	Glass fibers are not generally exposed in a single substance under normal processing and handling conditions as they are compounded in pellets. However,the following measures will be necessary to minimize the exposure to glass fibers or dusts containing glass fibers,when pellets or molded parts containing glass fibers are cut,ground or burnt,depending on environmental and operational conditions. ·Those who are sensitive in skin to glass fiber should wear suitable(protective) clothes to minimize the exposure of their skin. ·Wash working clothes apart from other laundry,so that the latter will not cause contamination with glass fibers. ·Provide the workshop with partitions to prevent diffusion of glass fiber dusts. ·Pay precautions not to rub face,neck or arms with hands. Wash hands and gargle after working without fall. ·Keep dust sources totally enclosed. ·Provide local air exhausters and implement periodical inspections and adjustments at least once a year. ·Reduce cutting and grinding processes to the possible minimum,and devise working procedures to minimize dust generation. ·Provide dust-preventive masks,protective glasses and gloves for personal hygiene. ·Determine the operational environment at indoor working places and confirm the effects of environmental improvement. Note) Glass fibers are,like road dusts,told to be least hazardous to human bodies,but proper measures are required to avoid useless inhaling.
STORAGE	:	Keep the substance away from any fire or heat sources for the sake of safe storage.
RECOMMENDED PACKAGING MATERIALS	:	No information.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

CONTROL CONCENTRATION	:	None at present
PERMISSIBLE CONCENTRATION	:	OSHA PEL/1985 Max. permissible concentration of inactive powder 15mg/m³ - ditto - (Aspiration) 5 mg/m³ ACGIH TLV/1992 1993 Exposure limit of the powder TWA 10 mg/m³
ENGINEERING MEASURE	:	When handling dust: Use totally enclosed containers resisting dust explosion. When heat melted in molding: Effective local ventilation must be provided.
PERSONAL PROTECTIVE EQUIPMENT	:	
RESPIRATORY PROTECTION	:	Wear a dust-proof mask.
EYE PROTECTION	:	Wear protective glases or goggles.
HAND PROTECTION	:	Wear heat-resisting gloves against burns, when handling molten polymer.
SKIN & BODY PROTECTION	:	Wear long sleeve clothes against burns, when handling molten polymer.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE etc.	:	Pellet
BOILING POINT	:	Not applicable

VAPOUR PRESSURE	:	Not applicable
VOLATILITY	:	Not applicable
SUBLIMATION	:	None
MELTING POINT	:	228℃
DENSITY	:	1.65
SOLUBILITY	:	Insolube in water
FLASH POINT	:	300℃ or higher
IGNITION POINT	:	300℃ or higher
EXPLOSION PROPERTY	:	Not applicable
INFLAMMABILITY	:	None
REACTIVITY WITH WATER	:	None
OXIDIZABILITY	:	None
SELF-REACTIVITY	:	None
DUST EXPLOSIVENESS	:	Upper explosion limit : Not applicable. Lower explosion limit : 35g/m³

10. STABILITY AND REACTIVITY

STABILITY AND REACTIVITY	:	Stable for nomal storage or handling.

11. TOXICOLOGICAL INFORMATION

SKIN CORROSIVE OROPERTIES	:	No finding.
SENSITIZING & IRRITANT EFFECTS	:	Gas generated in drying or melting is irritating eyes and skins.
ACUTE TOXICITY(INCLUDING LD50)	:	No finding.
SUBACUTE TOXICITY	:	No finding.
CHRONIC TOXICITY	:	No finding.
CARCINOGENECITY	:	No finding.
MUTAGENECITY(Micro organisms,chromosomal aberration)	:	No finding.
REPRODUCTIVE TOXICITY	:	No finding.
TERATOGENICITY	:	No finding.
OTHERS(Including generation of hazardous gases by reaction with water,for ezample)	:	No finding in this report means that there will be no hazard in general,but no proving data available at the time of reporting.
OTHER CAUTIONS	:	With regard to dust,the maximum permissible concentration and limits are fixed by OSHA and ACGIH.

OTHER CAUTIONS 2 : Information on hazards of glass fibers as filler.

〈Effects on Human Bodies〉

(1) Effects on skin

Stimulation to the skin with glass fibers may be caused when glass fibers diameter is larger than 4.5～5μm. They give mechanical stimulation followed by itchiness to the skin, but further continuous exposure reportedly results in extinction of stimulation. It may sometimes leads to irritable dermatitis complicated with urticaria or eczema-like reaction. It is, however reported that such dermatitis is not so serious in general and does not last too long. Therefore, skin stimulation can be prevented by proper use of glass fibers.

(2) Effects on Tumor

Investigations made on glass fibers till today reveal that there is neither increase in mortality of glass fiber production workers due to lung cancer or mesothelioma nor such cases reported.

〈Animal Test Report〉

It is suggested that carcinogenecity of mineral fibers is dependent on their shapes rather than on their constituents. According to a report on experiments using 17 kinds of artificial mineral fibers in various sizes prepared by Dr.Stanton of National Cancer Institute, in USA, statistical studies on corelations between the diameter and length of fibers and the coincidence of mesothelioma have revealed that mineral fibers having a diameter smaller than 0.25μm and a length larger than 8μm are closely related to the coincidence of cancers. Since these experiments were performed by artificially dosing the subject animals with a large quantity of glass fibers and consequently they are quite different from the actual exposures to human bodies, it is told to be problematic to make a conclusion that mineral fibers are hazardous to human health, basing on the results obtained from these experiments. Upto the present time, there is no result obtainable to demonstrate a mechanism of glass fibers causing lung cancers in spite of experiment by long exposure to glass fibers with high concentration.

12. ECOLOGICAL INFORMATION

BIODEGRADABILITY : No finding.

BIOACCUMULATION : No finding.

FISH TOXICITY : No finding.

13. DISPOSAL CONSIDERATION

WASTE FROM RESIDUES : This is designated as waste plastics among industrial wastes by the Wastes Disposal Law. Disposal waste pellets through licensed wastes handlers or local autonomous bodies if they are handling wastes disposal.

WASTE FROM RESIDUES 2 : When disposed by incineration,use the well controlled incinerators in accordance with the Wastes Disposal Law,Air Pollution Control Law and Water Pollution Prevention Law.

14. TRANSPORT CONSIDERATION

UN CLASSIFICATION NUMBER : Not applicable

OTHER CAUSIONS : Handle with care so as not to give damages to containers or not to be subjected to wetting.

OTHER CAUSIONS 2 : Secure the containers firmly so as not to cause collapsing.

15. REGULATORY INFORMATION

WASTE DISPOSAL LAW : Waste plastics among industrial wastes.

LAW CONCERNING REPORTING,ETC. OF RELEASES TO THE ENVIRONMENT OF SPECIFIC CHEMICAL SUBSTANCES AND PROMOTING IMPROVEMENTS IN THEIR MANAGEMENT(PRTR)	:	Designated as Class I Designated Chemical Substances Cabinet order Annex 1 No.25. The content of chemical substance required by the law will be given in another sheet. You are reqired to submit the confidential agreement for this information. Please take contact with our sales person for more detail.
INDUSTRIAL SAFETY AND HEALTH LAW	:	Designated as Cabinet order No.93 Annex 9 No.38.

16. OTHER INFORMATION

HANDLING OF THE DETAILS GIVEN ABOVE	:	This MSDS is the English version translated from the Japanese MSDS which is prepared for domestic use. Details given above are based on references, information and data available at this moment, but no warranty can be made on exactness of these details. They are also prepared on the assumption that the product will be handled in a normal way. For special handling, adequate safety and environmental measures should be taken in respect to its applications. Our products are not specifically intended for implants for medical and dental applications, and therefore they are not recommended for such applications. "No finding" in this report means that there will be no hazard in general, but no proving data is available at the time of reporting.
WHERE TO CALL FOR FURTHER INFORMATION	:	WinTech Polymer Ltd. Quality Assurance Dept. Tel. No 03-3593-2280

Test Report No. F690501/LF-CTSAYAU08-07614R1 Issued Date: May 02, 2008

To: **POONGSAN CORPORATION**
611, Daejung-ri
Onsan-up
Ulju-kun
ULSAN
KOREA

The following merchandise was submitted and identified by the client as :

Product name	:C2680
SGS File No.	: AYAU08-07614R1
Received Date	: April 25, 2008
Test Performing Date	: April 28, 2008
Test Performed	: SGS Testing Korea tested the sample(s) selected by applicant with following results
Test Results	: For further details, please refer to following page(s)
Comments	: This Report supersedes the Report No. F690501/LF-CTSAYAU08-07614 dated May 02, 2008 issued by SGS Testing Korea Co., Ltd.

SGS Testing Korea Co. Ltd. / Ulsan Laboratory

Sharpless Park
Annie Lim
Helen Yeo /Testing Person

Thomas Hwang / Ulsan Lab. Mgr

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Sample No. : AYAU08-07614R1.001

Sample Description : C2680

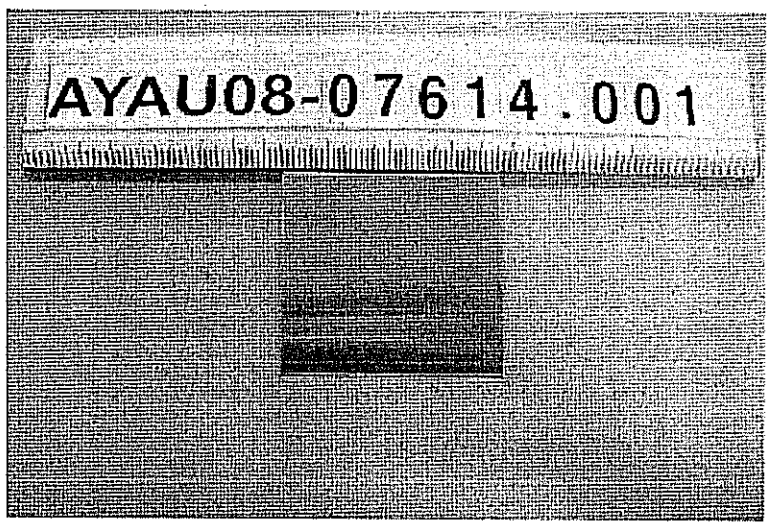
Item No./Part No. : BA

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3052, ICP-AES	1	N.D.
Lead (Pb)	mg/kg	US EPA 3052, ICP-AES	5	19.0
Mercury (Hg)	mg/kg	US EPA 3052, ICP-AES	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A, UV-vis	1	N.D.

Picture of Sample as Received:

Sample Color : **Gold**



*** End ***

NOTE: (1) N.D. = Not detected.(<MDL)
(2) mg/kg = ppm
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable

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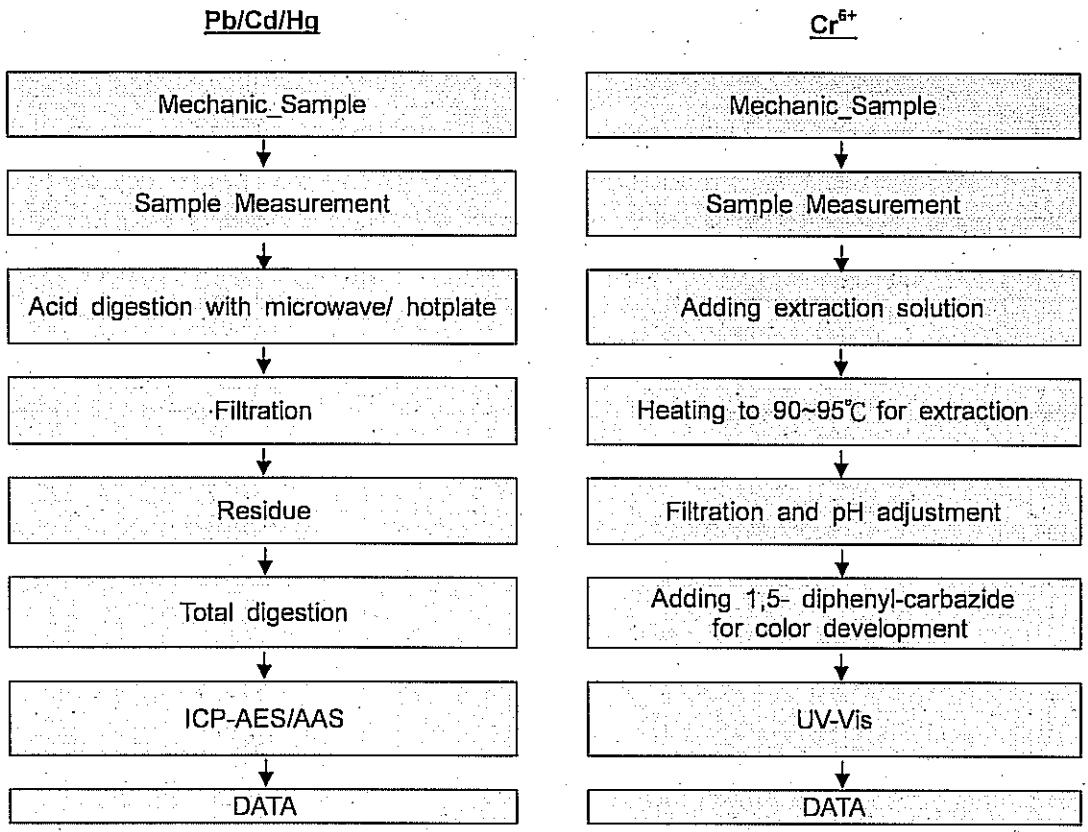
Testing Flow Chart for RoHS: Pb/Cd/Hg/Cr^{6+}Testing



The samples were dissolved totally by pre-conditioning method according to above flow chart for Cd,Pb,Hg.

Operator	Sharpless Park
Section Chief	Thomas Hwang

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POONGSAN 주식회사 풍산 온산공장	물질안전보건자료 (Material Safety Data Sheet)	
	물질명 : 황동 (Brass) Cas No :	Page 1/3
	발행일자	2006.4.17
	개정일자	2007.9.3

1. 제품 및 제조회사 정보

① 물질명 : 황동 대, 봉, 선 (C2600, C2680, C2700, C2800 Brass Strip, Bar, Wire)
② 용도 : 전기부품 외
③ 유해성분류 (노동부고시기준) : 자료없음
④ 화학적 일반 특성 : 고체
⑤ 제조자 주소 / 정보 : (주)풍산 온산공장
주소 : 울산광역시 울주군 온산읍 대정리 611번지
⑥ 공급자 주소 / 정보 : (주)풍산
주소 : 서울특별시 중구 충무로 3가 60-1

2. 구성성분 명칭 및 조성

명 칭	이 명	CAS No	함유량(%)
① Copper	Cu	7440 - 50 - 8	61.0 ~ 70.5%
② Zinc	Zn	7440 - 66 - 6	39.0 ~ 29.5%

3. 위험유해성

① 유해성분류
CERCLA 지수 : 보건=(0) 화재=(3) 폭발=(1)
② 급성영향 : 금속열, 설사, 복통, 현기증, 신경손상, 쇼크, 구토증상, 피부염을 유발할 수 있음
③ 만성영향 : 급성영향과 동일하며 탈모, 두통, 폐질환을 병행할 수 있음
④ 인체침입경로 : 호흡기, 소화기

4. 응급조치요령

① 피부 : 오염된 의복과 신을 벗긴 후 다량의 물로 씻을 것
② 눈 : 다량의 물로 씻을 것
③ 흡입 : 신선한 공기가 있는 곳으로 옮긴 후 필요에 따라 인공호흡을 시킬 것
④ 섭취 : 구토를 하면 흡입을 위해 기도를 확보하고 식염수로 위세척을 할 것
⑤ 의사정보 : 즉시 의학적인 조치를 받을 것

5. 화재 및 폭발시 대처방법

① 인화점/발화점 : 자료없음
② 폭발 : 용융된 상태의 경우 물과 격렬히 반응할 수 있음.
③ 소화제 종류 : 분말소화제, 소다 회, 석회 또는 모래를 사용할 것
④ 진화방법 : 타는 물질에 물을 뿌리지 말고 모래등을 사용할 것
⑤ 유해연소생성물 : 자료없음

6. 누출사고시 대처방법

① 개인 보호 조치 : 유출된 물질을 만지지 말고 감독자의 지시를 따를 것
② 환경 보호 조치 : 누출된 물질을 회수하여 분리수거 후 재활용할 것
③ 사고 후 조치 : 전문가의 지시에 따라 조치할 것

7. 노출 방지 및 개인 보호구

① 허용농도
TWA : 10mg / ㎥ (총분진으로 OSHA 기준)
② 공학적인 조치 : 방폭구조로 된 국소 배기장치 및 전체 환기장치를 설치할 것
③ 개인보호구 : 보안경, 보호의, 보호장갑, 방진마스크, 기타

8. 취급 및 저장방법

① 취급시 주의사항 : 산, 할로겐 화합물, 탄화수소와 격리할 것
용융액에 물유입시 폭발가능성 있음
동분취급 작업시 방진 마스크, 보안경, 보호의 착용
② 저장시 주의사항 : 수분방지 대책이 된 건조하고 환기가 잘되는 곳에 보관할 것

9. 안전성 및 반응성

① 안정성 : 상온·상압에서 안정함
② 반응성 : 산 또는 물과 반응하여 인화성이 강한 수소를 발생함
③ 피해야 할 조건 : 화합물질과의 혼합(합성)시에는 전문가의 지시를 따를 것
④ 피해야 할 물질 : 화학반응시 급격한 분해 또는 폭발가능성 있음

10. 물리 화학적 특성

① 외관 : 고체
② 냄새 : 무취
③ PH : 적용안됨
④ 용해도 : 적용안됨
⑤ 비점 : 자료없음
⑥ 융점 : 900℃
⑦ 폭발성 : 자료없음
⑧ 산화성 : 자료없음
⑨ 비중 : 8.50
⑩ 증기압 : 적용안됨

11. 독성에 관한 정보

① LD50 : 자료없음
② LC50 : 자료없음
③ 발암성 : 없음

12. 환경에 미치는 영향

① 수생 및 생태독성 : 자료없음
② 토양이동성 : 자료없음
③ 잔류성 및 분해성 : 자료없음
④ 동생물의 생체내 축적 가능성 : 자료없음

13. 폐기 시 주의사항

① 폐기물관리법상 규제현황 : 미규정
② 폐기방법 : 관련규정을 준수하여 폐기할 것
③ 폐기 시 주의사항 : 특이사항 없음

14. 운송에 필요한 정보

① 선박안전법 위험물선박운송 및 저장규칙에 의한 분류 및 규제 : 자료없음
② 운송 시 주의사항 : 자료없음
③ 기타 외국의 운송관련 규정에 의한 분류 및 규제 : 자료없음

15. 관련법규에 관한 정보

① 산업안전 보건법 : MSDS 작성대상 물질
② 환경관리법 : 해당없음
③ 소방법 : 해당없음

16. 기타 참고사항

① 관련 근거 : 산업안전보건법 제41조 [물질안전보건자료의 작성, 비치 등]
② 참고 자료 : 화학물질 및 물리적인자의 노출기준 (노동부 고시 제97-65호)

■ MSDS 관련문의 : (주)풍산 온산공장 시험분석팀 (052-231-9383)