



# PROPERTIES OF TAK MATERIALS (TAK 材質表)

Mn-Zn Ferrite Series (For High  $\mu$  MATERIALS) 錳-鋅氧化磁鐵粉系列(高頻使用)

CHARACTERISTICS(特性)	UNIT(單位)	T2	T3	T5	T7	TP40	T10	T2M
$\mu_{iac}$ (初透磁率)	----	2800	3500	5500	7500	2400	9800	2000
APPLICABLE 適用 FREQUENCY 頻率	MHz(百萬赫茲)	<0.4	<0.2	<0.1	<0.1	<0.4	<0.1	<0.5
Bm(飽和磁束密度)	Gauss(高斯)	4800	4600	4000	4000	5100	4500	5100
Br(殘留磁束密度)	Gauss(高斯)	1400	1350	1250	1250	1100	1200	1300
Hc(保持力)	Oersted(奧斯特)	0.15	0.18	0.08	0.07	0.13	0.08	0.12
Tc(居禮溫度)	°C(攝氏)	200	180	110	110	210	140	220
$\alpha \mu r$ (溫度係數)	$\times 10^{-6}/^{\circ}\text{C}$ (攝氏)	4	1.5	1.5	0.6	8	-0.1	6
Tan $\delta / \mu_{iac}$ (相對損失因子)	$\times 10^{-6}$	10	8.0	20	25	5	2	8
d(密度)	$\text{g}/\text{cm}^3$ (公克/立方公分)	4.8	4.8	4.9	4.9	4.8	4.8	4.9
$\rho$ (表面阻抗)	$\Omega \text{ cm}$ (歐姆)	300	30	15	10	650	50	600





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CHARACTERISTICS	UNIT	T2	TP40
$\mu_{iac}$	-----	2800	2400
APPLICABLE FREQUENCY	Mhz	<0.4	<0.4
Bm	Gauss	4800	5100
Br	Gauss	1400	1100
Hc	Oersted	0.15	0.13
Tc	°C	200	210
$\alpha \mu r$	$\times 10^{-6}/^{\circ}\text{C}$	4	8
Tan $\delta / \mu_{iac}$	$\times 10^{-6}$	10	5
d	g/cm <sup>3</sup>	4.8	4.8
$\rho$	$\Omega$ cm	300	650

- $\mu_{iac}$  ( AC intial permeability ): This is the permeability when a demagnetized core is measured in a weak AC magnetic field.
- tan  $\delta / \mu_{iac}$  ( Relation loss factory ): This indicates the ratio of tan  $\delta$  to  $\mu_{iac}$ .
- $\alpha \mu r$  ( Temperature factory of permeability ): This indicates the temperature dependence of permeability and is defined by following formula;  $\alpha \mu r =$

$$\alpha \mu r = \frac{1}{T_1 - T_2} \frac{\mu_2 - \mu_1}{(\mu_1)^2}$$

- Tc ( Curie temperature ): This is the transition temperature when the magnetism of the ferrite core changed from ferromagnetism to paramagnets.
- Bm ( Effective flux density ) : This is the magnetic flux density when Hms is applied. (Refer to the figure below.).
- Br ( Effective retentively ) : This is the magnetic flux density that remains after the strength of the magnetic field has been reduced to zero following demagnetization from a state of saturation. (Refer to the figure below.).
- Hc ( effective coercive force ) : This is the strength of the magnetic field on the opposite direction that is necessary to reduce the magnetic flux density to zero following demagnetization from a state of saturation. (Refer to the figure below.).



## Test Report

No. CANEC0800556103

Date: 05 Mar 2008

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TAK TECHNOLOGY CO.,LTD  
NO.3RD INDUSTRIAL AREA JUZHOU SHIJIE TOWN DONGGUAN CITY GUANGDONG PROVINCE  
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as :  
T2 MATERIAL FERRITE CORE

SGS Job No. : 10870088 - SZ  
SGS Internal Reference No. : 18.3  
Date of Sample Received : 29 Feb 2008  
Testing Period : 29 Feb 2008 - 04 Mar 2008

Test Requested : Selected test(s) as requested by client.

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

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

Signed for and on behalf of  
SGS-CSTC Ltd.



Huang Fang, Sunny  
Sr. Engineer

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# Test Report

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### Test Results:

ID for specimen 1 : CAN08-005561.003  
 Description for specimen 1 : Dk-gray core

### Heavy metal(s)

Test Item(s)	Unit	Test Method (Reference)	Result	MDL
Cadmium (Cd)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	N.D.	2
Lead (Pb)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	N.D.	2
Mercury (Hg)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	N.D.	2
Hexavalent Chromium (CrVI) by alkaline extraction	mg/kg	IEC 62321/2nd CDV (111/95/CDV), UV-Vis	N.D.	2

### Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit

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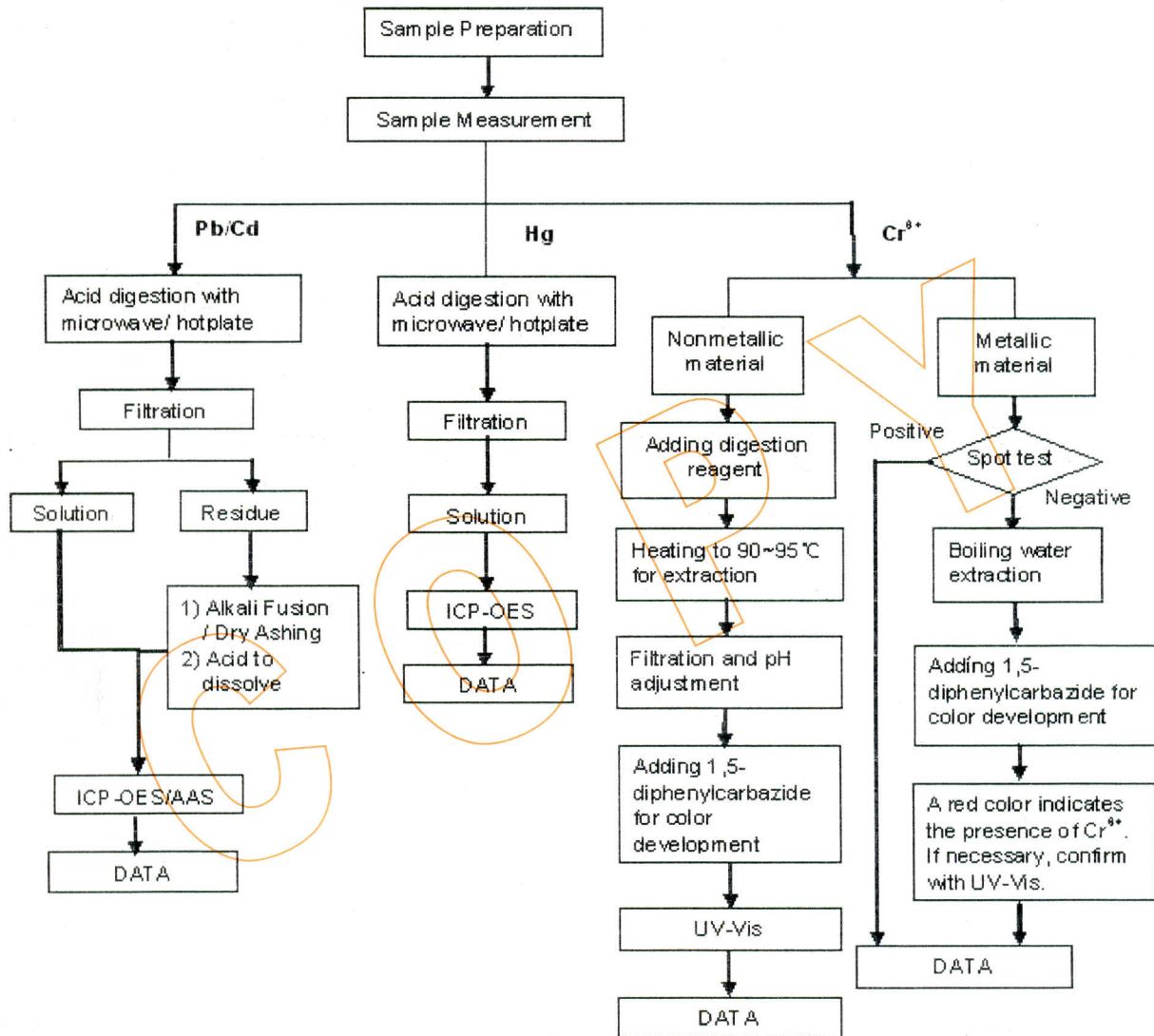
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GZCM 1934072

### ATTACHMENTS

### Testing Flow Chart

- 1) Name of the person who made measurement: David Shen
- 2) Name of the person in charge of measurement: Emily Feng



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