ANALISIS POR DIFRACCION DE RAYOS X
(HOJAS 13-11, 14-11- 15-11)

Análisis por Difracción de Rayos X

Método del polvo cristalino y obtención de Agregado Orientado que se ha sometido a pruebas de hinchamiento (con Etilenglicol en fase de vapor a 60°C) y colapsamiento (550°C/2 horas).
Equipo Philips PW-1700. Tubo de Cobre (40 kV, 40 mA)

			Fracción Arcilla (Filosilicatos)		
Muestra	**Minerales Principales**	**Otros Minerales**	**Contenido**	**Mineral principal**	**Otros Minerales**
13-11-IGHE-0201	CUARZO 54%	F. POTÁSICO 2%, CALCITA 7%	37 %	CAOLÍN, MICA, CLORITA, ESMECTITA (1)	---
13-11-IGHE-0202	CUARZO 28%	CALCITA 26%	46%	MICA, CLORITA, CAOLÍN	---
13-11-IGHE-0301	CUARZO 73%	---	27%	ESMECTITA	CAOLÍN, MICA
13-11-IGHE-0302	CUARZO 20%	CALCITA 15%	65%	MICA, CAOLÍN, CLORITA, ESMECTITA (1)	---
13-11-IGHE-0601	CUARZO 89%	---	11%	MICA, CAOLÍN	---
13-11-IGAS-1101	CUARZO 40%	PLAGIOCLASAS 2%, F.POTÁSICO 2%	56%	MICA	CAOLÍN
13-11-IGAS-1102	CUARZO 46%	F.POTÁSICO 5%, PLAGIOCLASAS 2%, CALCITA 3%	44%	MICA, CAOLÍN	---
13-11-IGAS-8001	CUARZO 44%	F.POTÁSICO 2%, PLAGIOCLASAS 3%	51%	MICA	CAOLÍN, ESMECTITA
14-11-IGHE-0101	CUARZO 44%	CALCITA 14%, DOLOMITA 10%	32%	MICA, CAOLÍN	CLORITA
14-11-IGHE-0102	CUARZO 54%	F.POTÁSICO 3%	43%	MICA, CAOLÍN	CLORITA

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INFORME DE LABORATORIO Nº 95/360

			Fracción Arcilla (Filosilicatos)		
Muestra	**Minerales Principales**	**Otros Minerales**	**Contenido**	**Mineral principal**	**Otros Minerales**
14-11-IGHE-0201	CUARZO 49%	CALCITA 11%, DOLOMITA 2%, FELDESPATOS 3%	35%	MICA, CAOLÍN	CLORITA
14-11-IGHE-0401	CUARZO 86%	---	14%	MICA, CAOLÍN	CLORITA (2)
14-11-IGHE-0402	CUARZO 39%	CALCITA 6%, PLAGIOCLASAS 2%	53%	ESMECTITA, CAOLÍN	MICA, CLORITA (1)
15-10-IGFN-8005	CUARZO 41%	F.POTÁSICO 3%, PLAGIOCLASAS 2%	54%	MICA, CAOLÍN	CLORITA
15-11-IGHE-0101	CUARZO 37%	CALCITA 15%, FELDESPATOS 2%	46%	MICA, CAOLÍN	---
15-11-IGHE-0201	CALCITA 61%	CUARZO 17%	22%	MICA, CAOLÍN	CLORITA
15-11-IGHE-0202	CALCITA 47%	CUARZO 44%	9%	MICA	---
15-11-IGHE-0203	CUARZO 36%	DOLOMITA 14%, CALCITA 3%, FELDESPATOS 2%	45%	MICA, CAOLÍN	CLORITA (2)

1) Se observa picos a 14 Å y 17 Å en el tratamiento térmico con Etilenglicol y pico a 14 Å en el tratamiento térmico a 550°C lo que indica la coexistencia de CLORITA y ESMECTITA.

2) Se observa un débil colapsamiento a 13 Å (550°C) lo que indica una CLORITA-VERMICULITIZADA

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Descripción de los procedimientos utilizados para la separación de minerales pesados:

* **Disgregación física de la muestra con la ayuda de un martillo de goma.** Con el fin de conseguir una disgregación completa de todas las partículas, se ha utilizado un baño de ultrasonidos.

* **Obtención de la fracción granulométrica entre 297 y 53 μm** mediante tamizado por vía húmeda. Secado en estufa a 120°C.

* **Separación de los minerales con densidad mayor a 2.82 g/cm^3** (Bromoformo estabilizado con 1% de etanol) incluidos en esa fracción. Para ello se han seguido los siguientes pasos:

  . Introducción de la fracción objeto de estudio en recipientes con diseño especial rellenos de bromoformo.

  . Para acelerar el proceso de separación se han mantenido estos recipientes(con la muestra incluida en ellos) 20 minutos en una centrifugadora (a 3000 r.p.m.). Los minerales con densidad menor a la del bromoformo flotan en él, mientras que los que poseen una densidad mayor se hunden.

  . Filtrado de ambas fracciones y secado de las mismas.

  . Lavado con 1,1,1 tricloroetano.

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Resultados. Se dan los pesos siguientes:

1) Peso Total de la muestra

2) Porcentajes de las fracciones:

Ø > 297 μm
297 > Ø > 53 μm
Ø < 53 μm

3) Porcentaje de los minerales con densidad mayor a 2.82 g/cm^3 incluidos en la fracción 297 > Ø > 53 micras

Muestra	Peso Total (g)	+297 (%)	-297+53 (%)	-53 (%)	(%) Fracción ρ > 2.82 (**)
13-11-IGHE-0301	296.07	27.38	39.47	33.15	0.81
13-11-IGHE-0302	347.50	0.48	1.15	98.37	1.02
13-11-IGHE-0601	917.19 (*)	16.89	67.42	15.69	2.13
13-11-IGHE-0203	315.83	7.16	27.55	65.29	0.63
15-11-IGHE-0101	771.73	20.97	20.50	58.53	1.30
15-11-IGHE-0203	856.73	7.97	6.09	85.94	1.63

(*) Solo se han utilizado 242.08 g de la muestra 13-11-IGHE-0601.
(**) El porcentaje de minerales densos se ha calculado dentro de la fracción -297+53.

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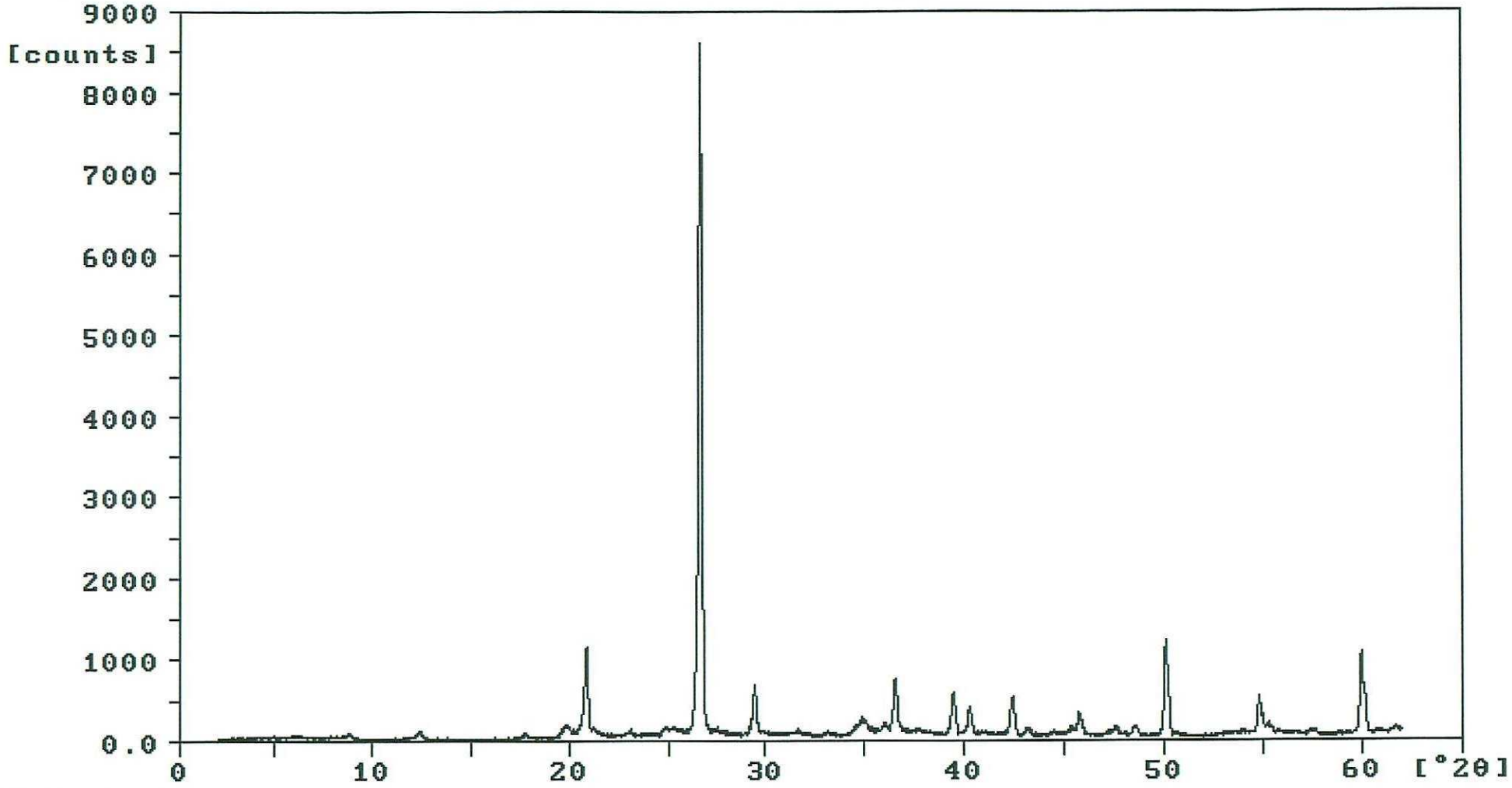
ANEXO

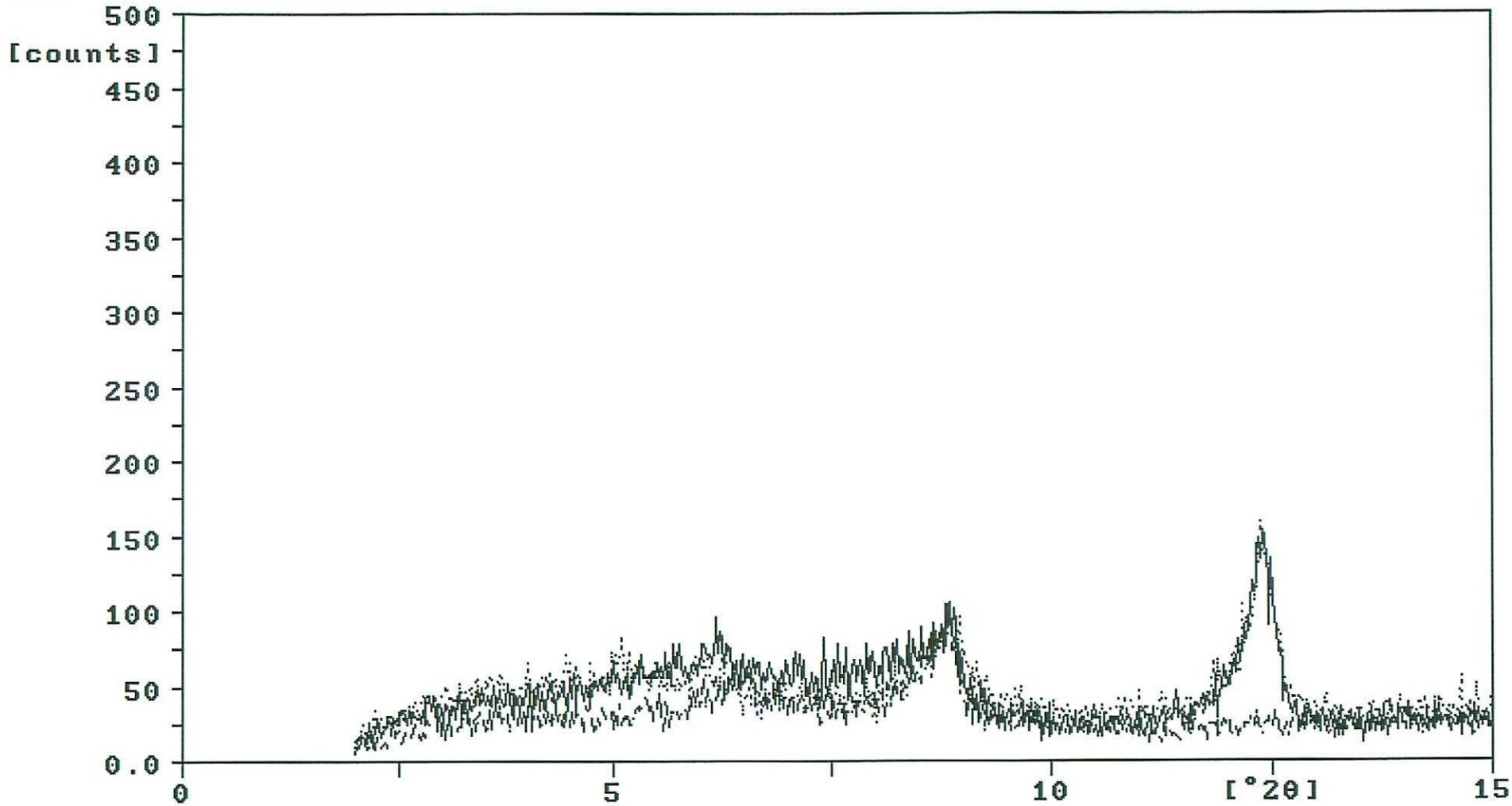
DIAGRAMAS de D.R.X

Sample identification: HOJA 13-11 IGHE-0201 1-dec-1995 13:14



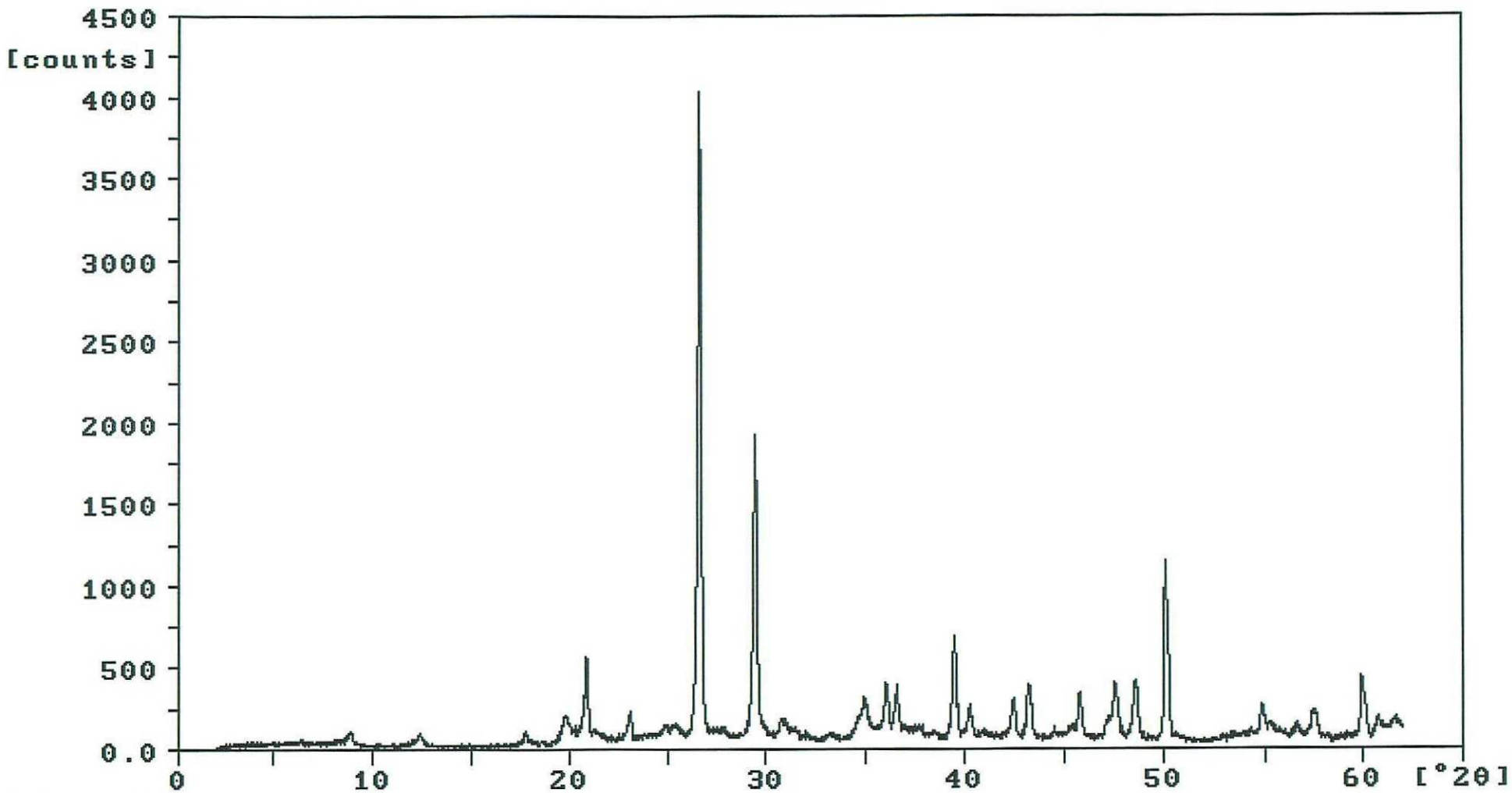
95360-1.RD

Sample identification: H13-11 IGHE-0201 1-dec-1995 13:19



360-1A.RD 360-1E.RD 360-1T.RD

Sample identification: HOJA13-11 IGHE-0202 1-dec-1995 13:22



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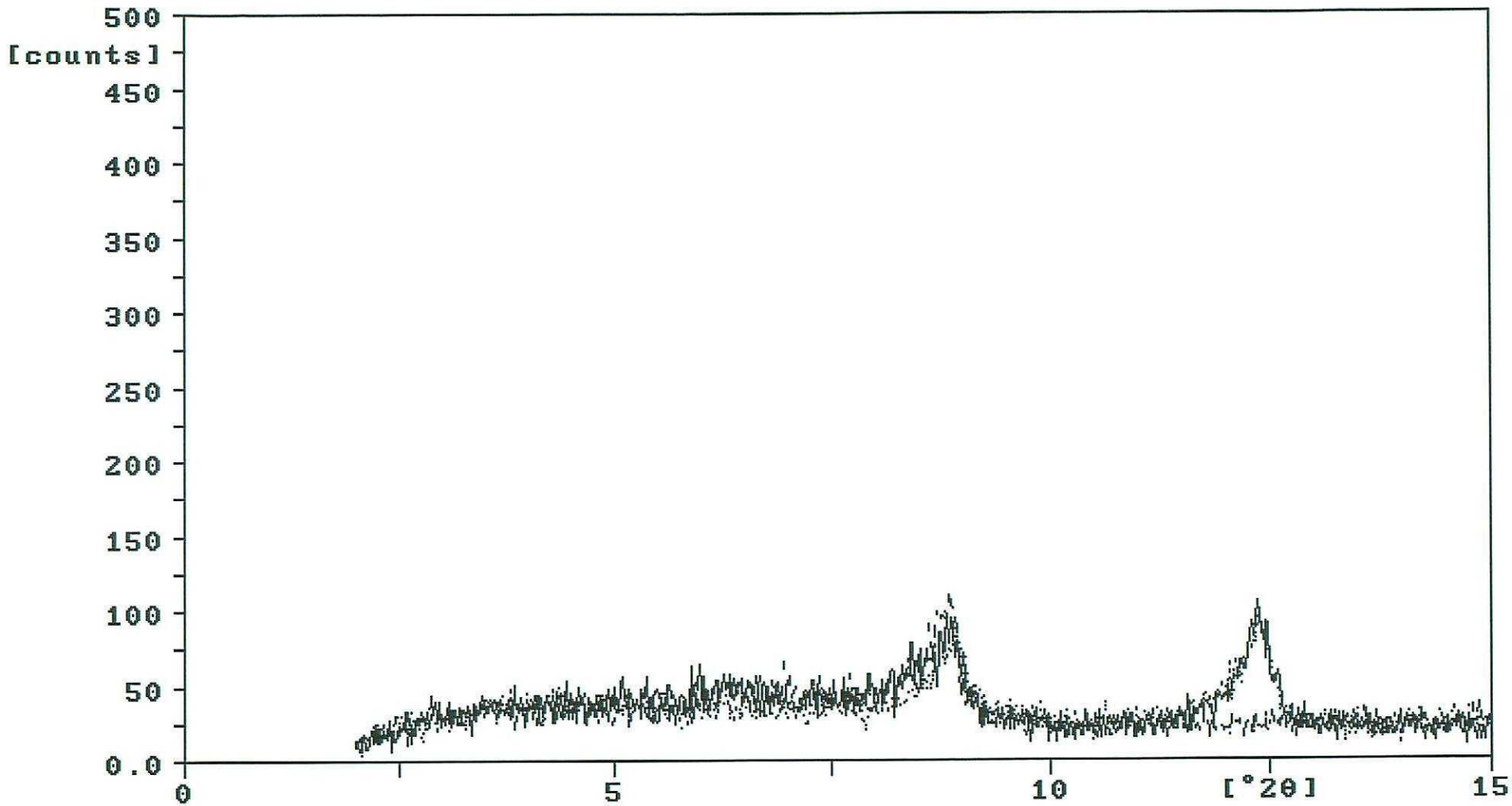

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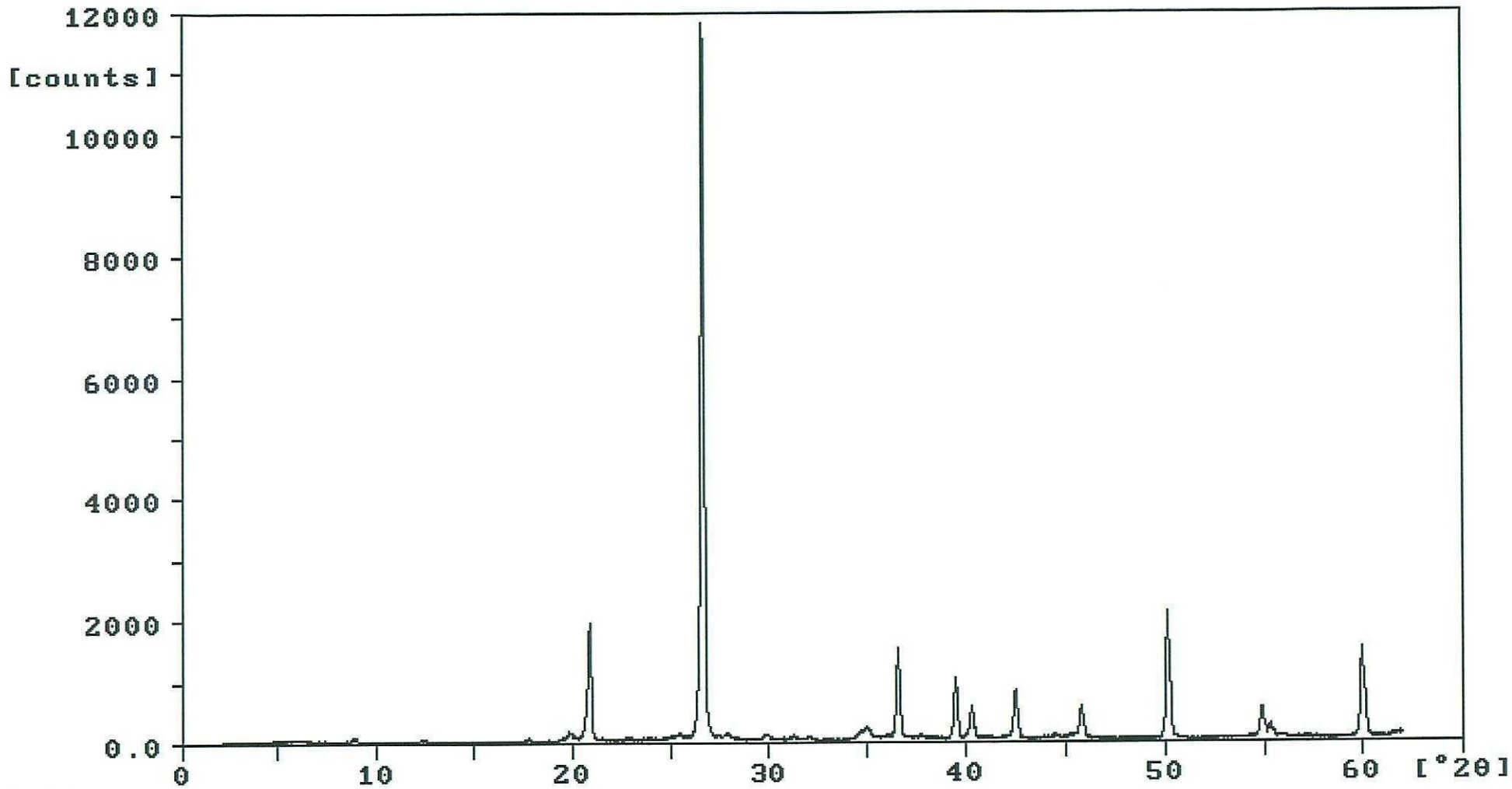
Sample identification: HOJA 13-11 IGHE-0301 1-dec-1995 13:23



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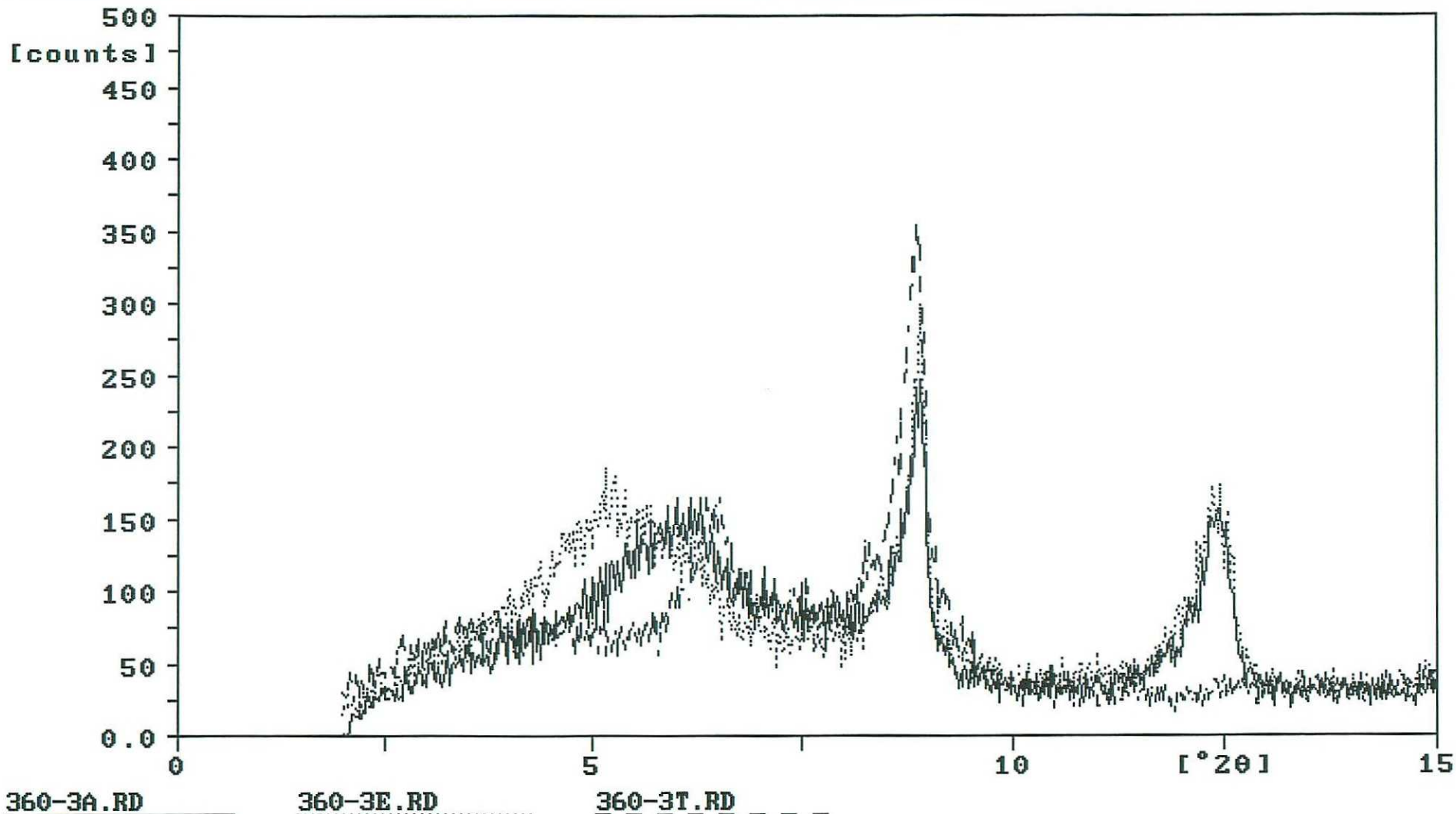

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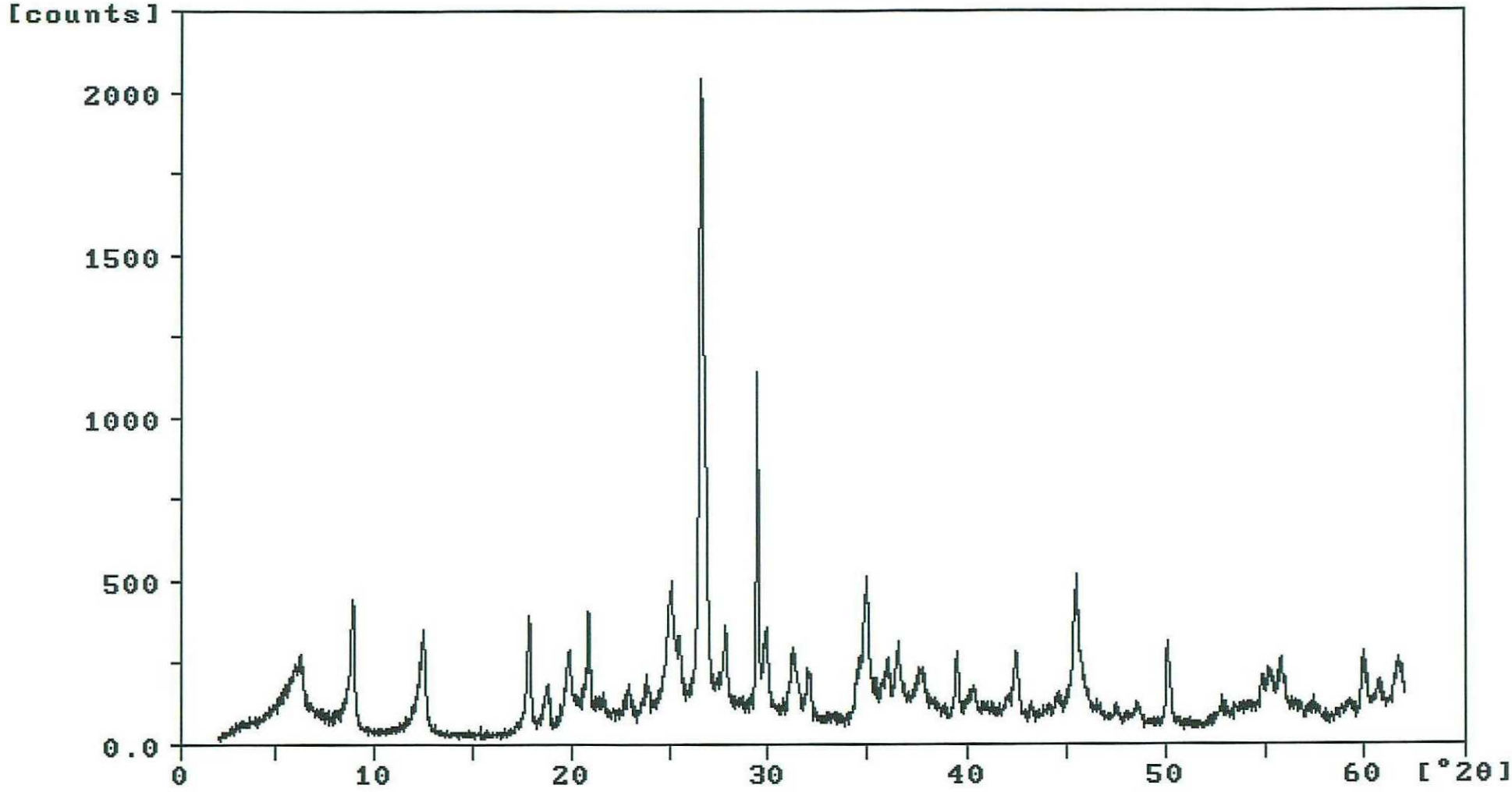

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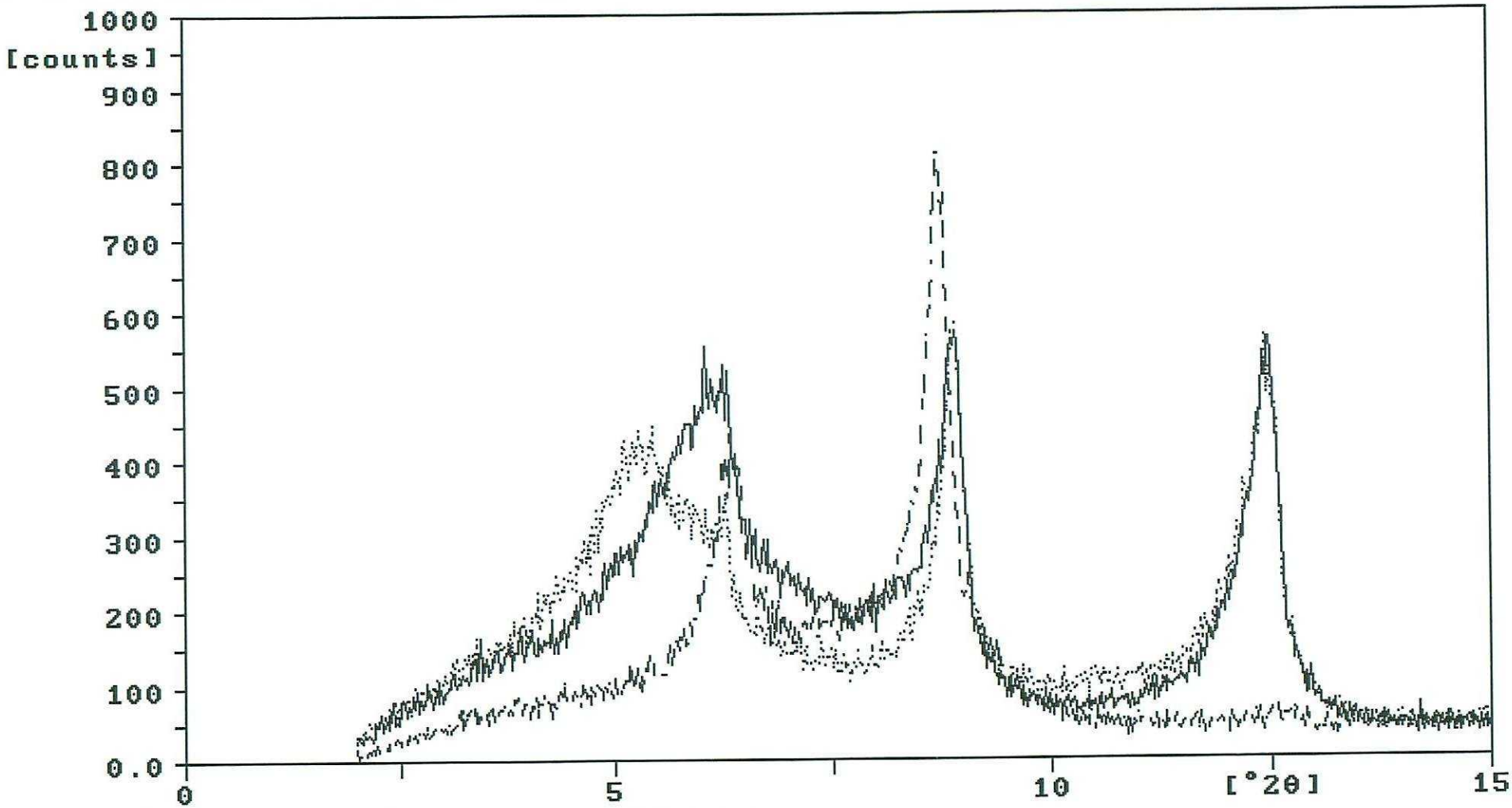
1-dec-1995 13:31



360-4A.RD ——— 360-4E.RD ..... 360-4T.RD _ _ _

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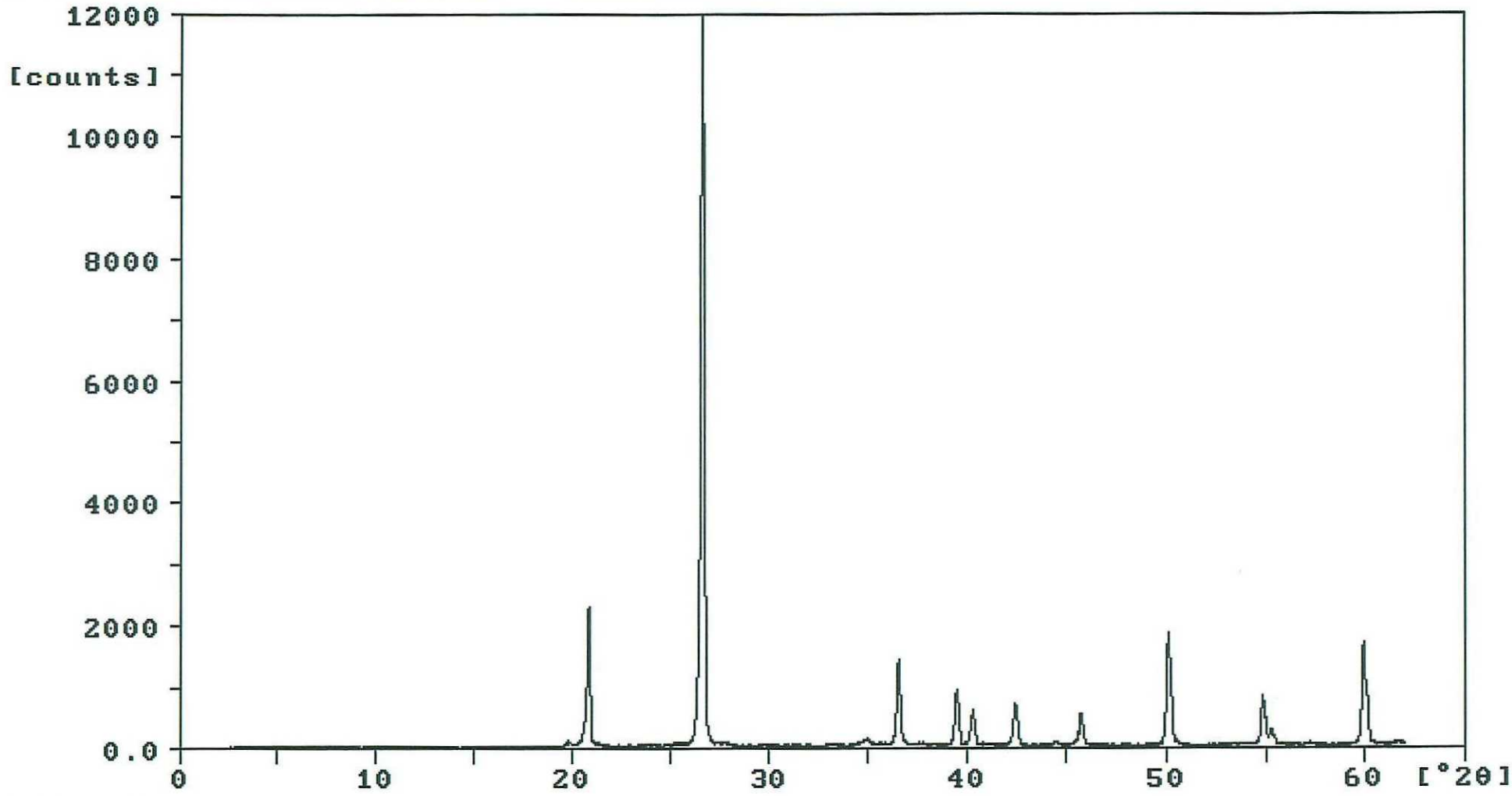

95360-5.RD

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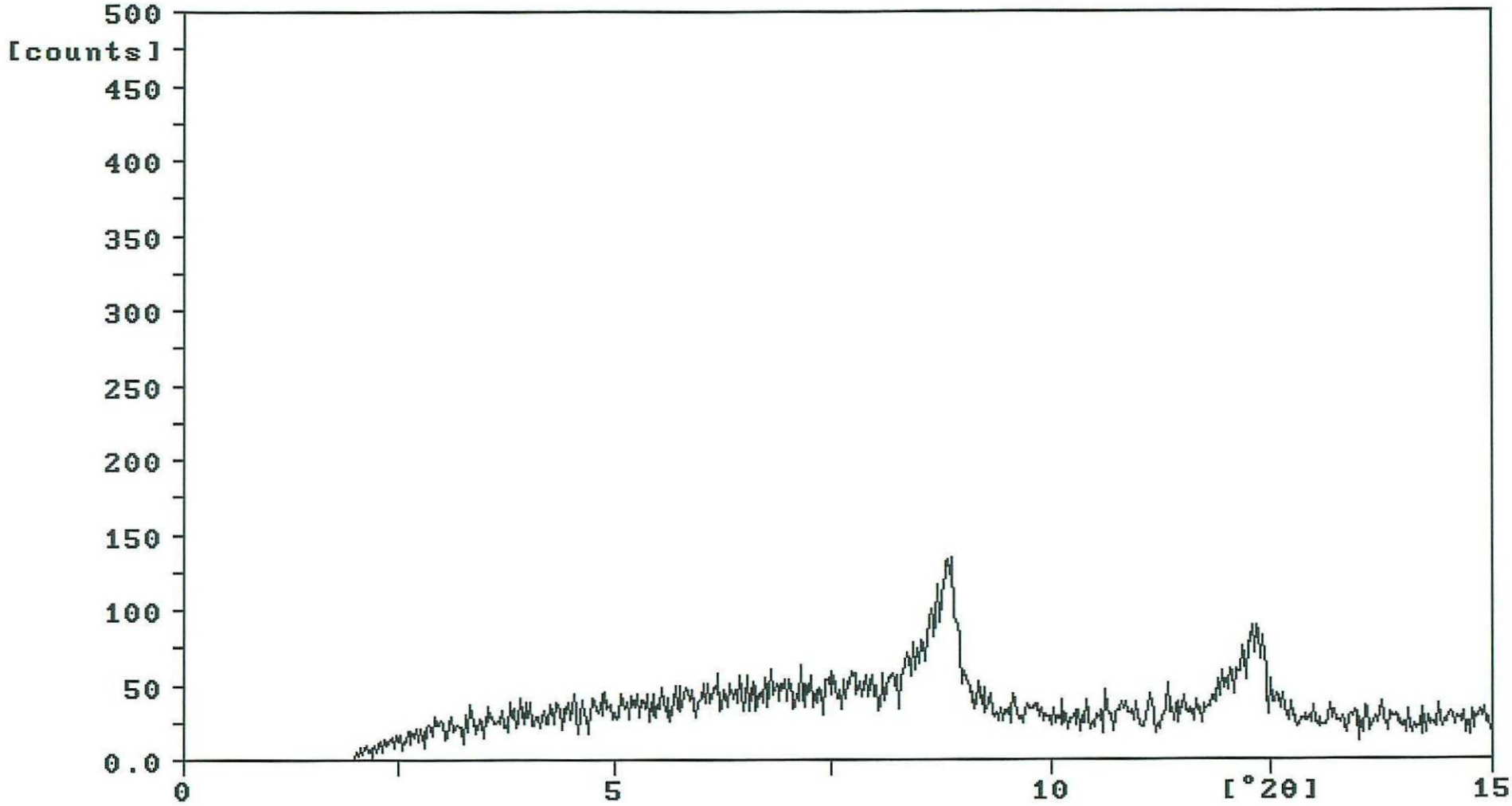

360-5A.RD

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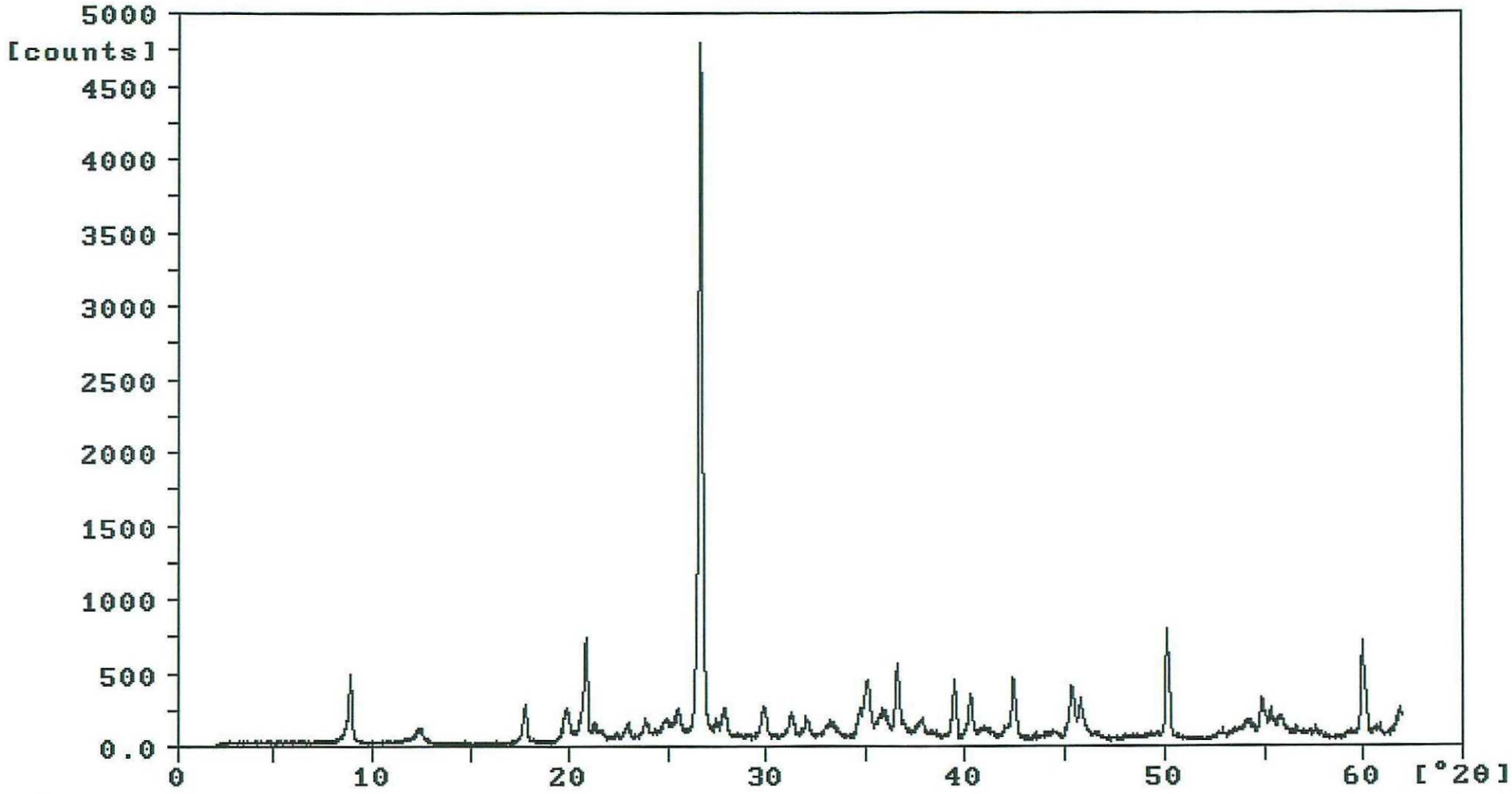

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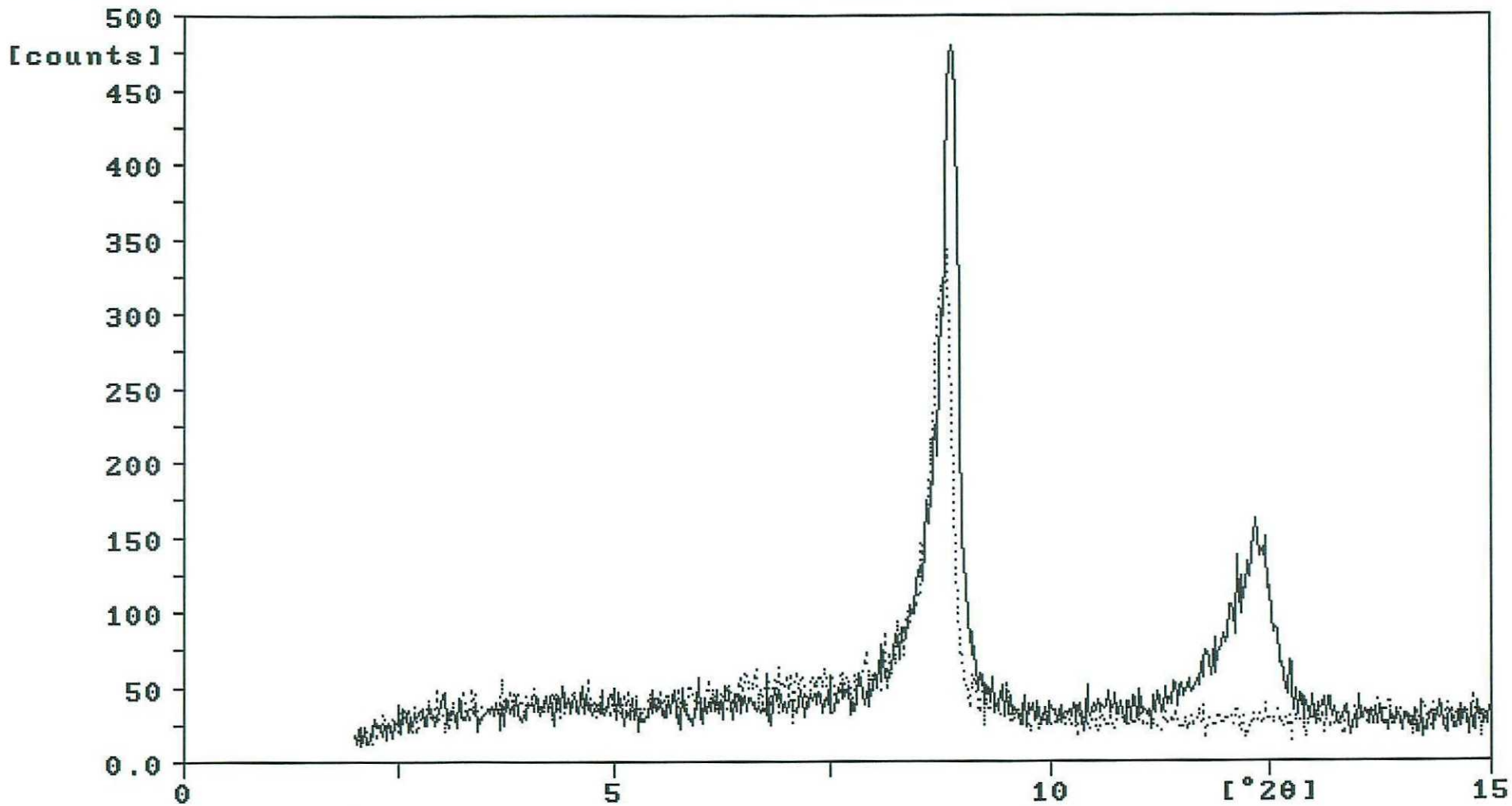

360-6A.RD 360-6T.RD

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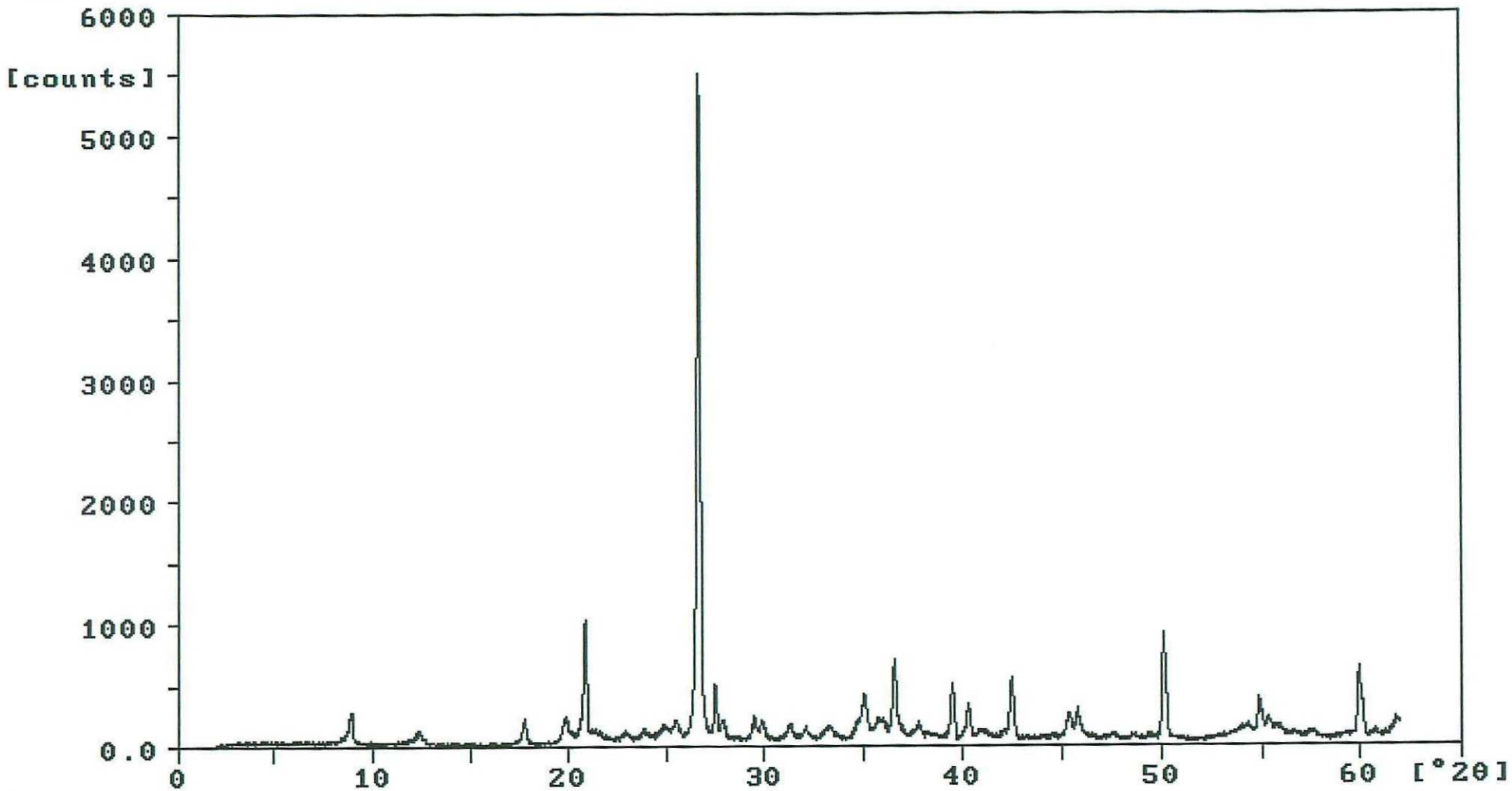

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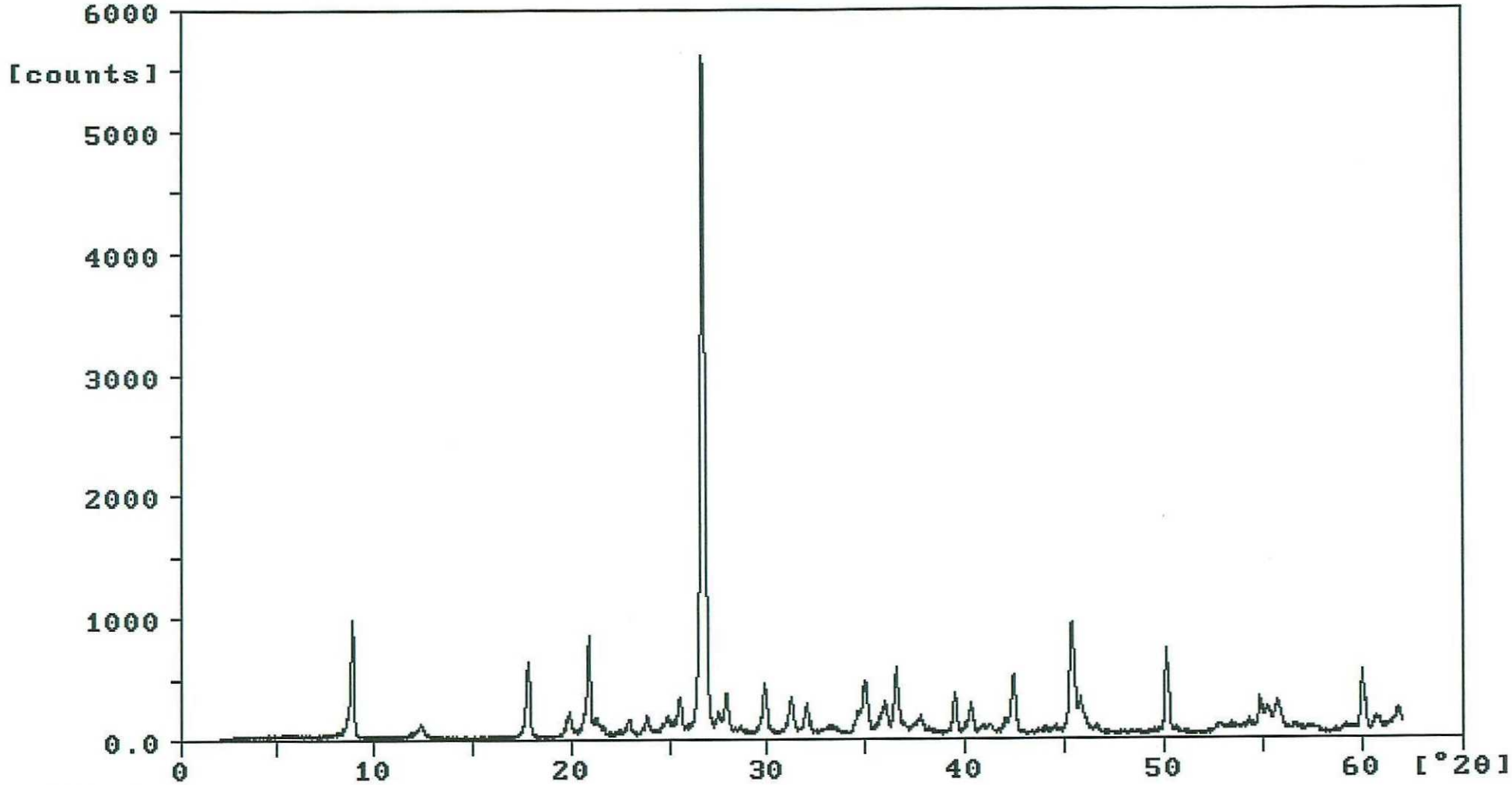

95360-8.RD

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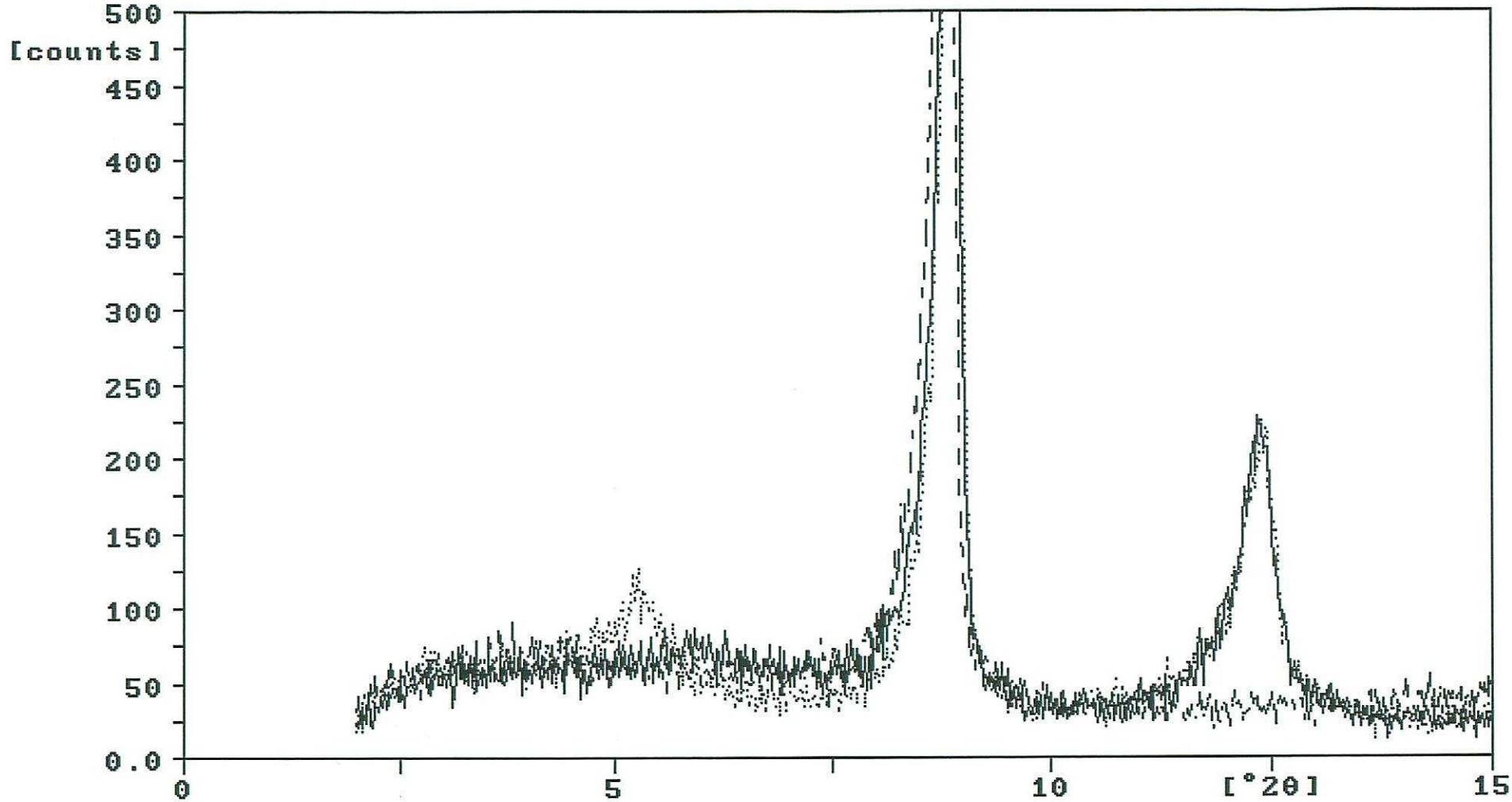

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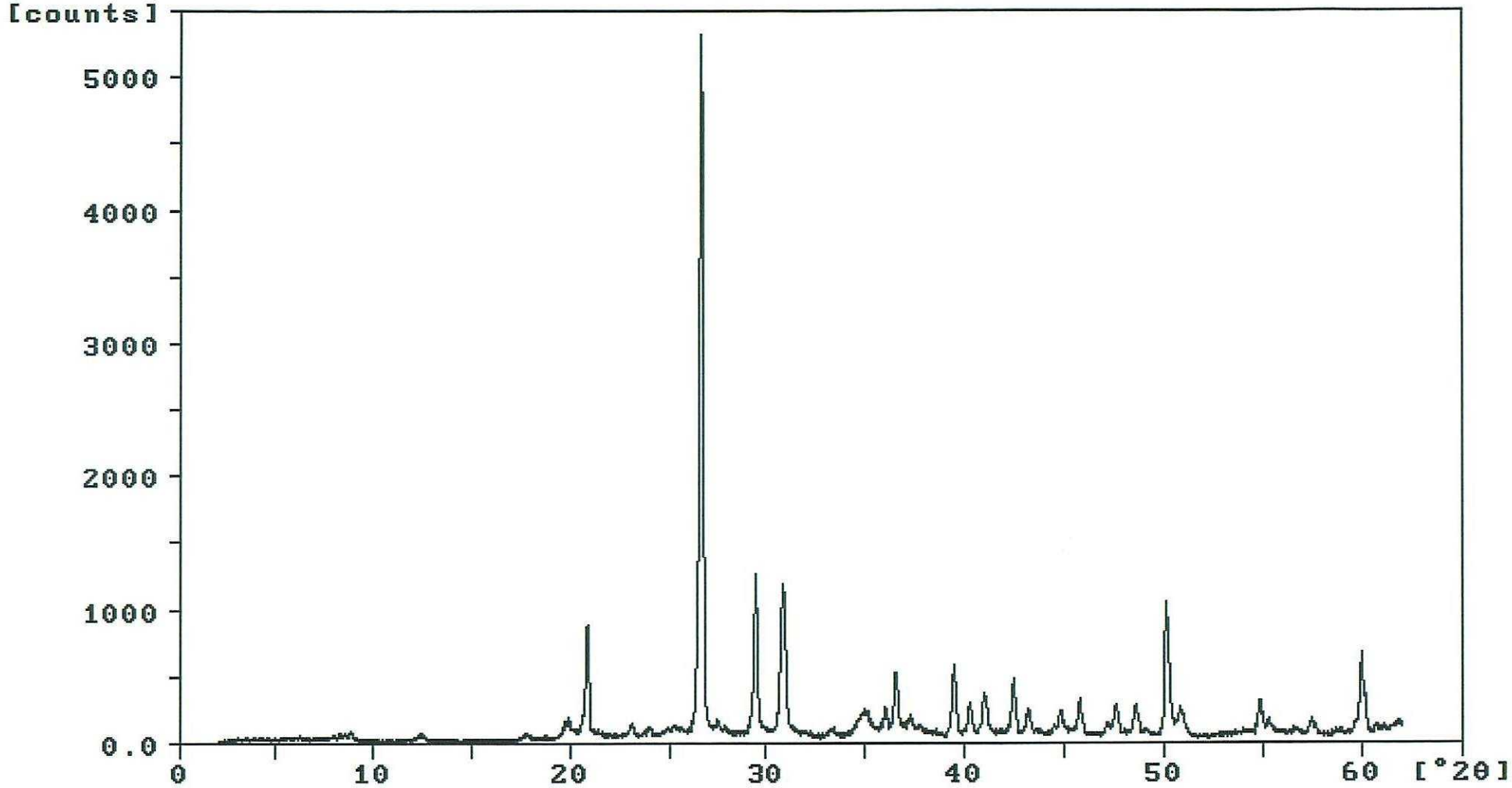

95360-10.RD

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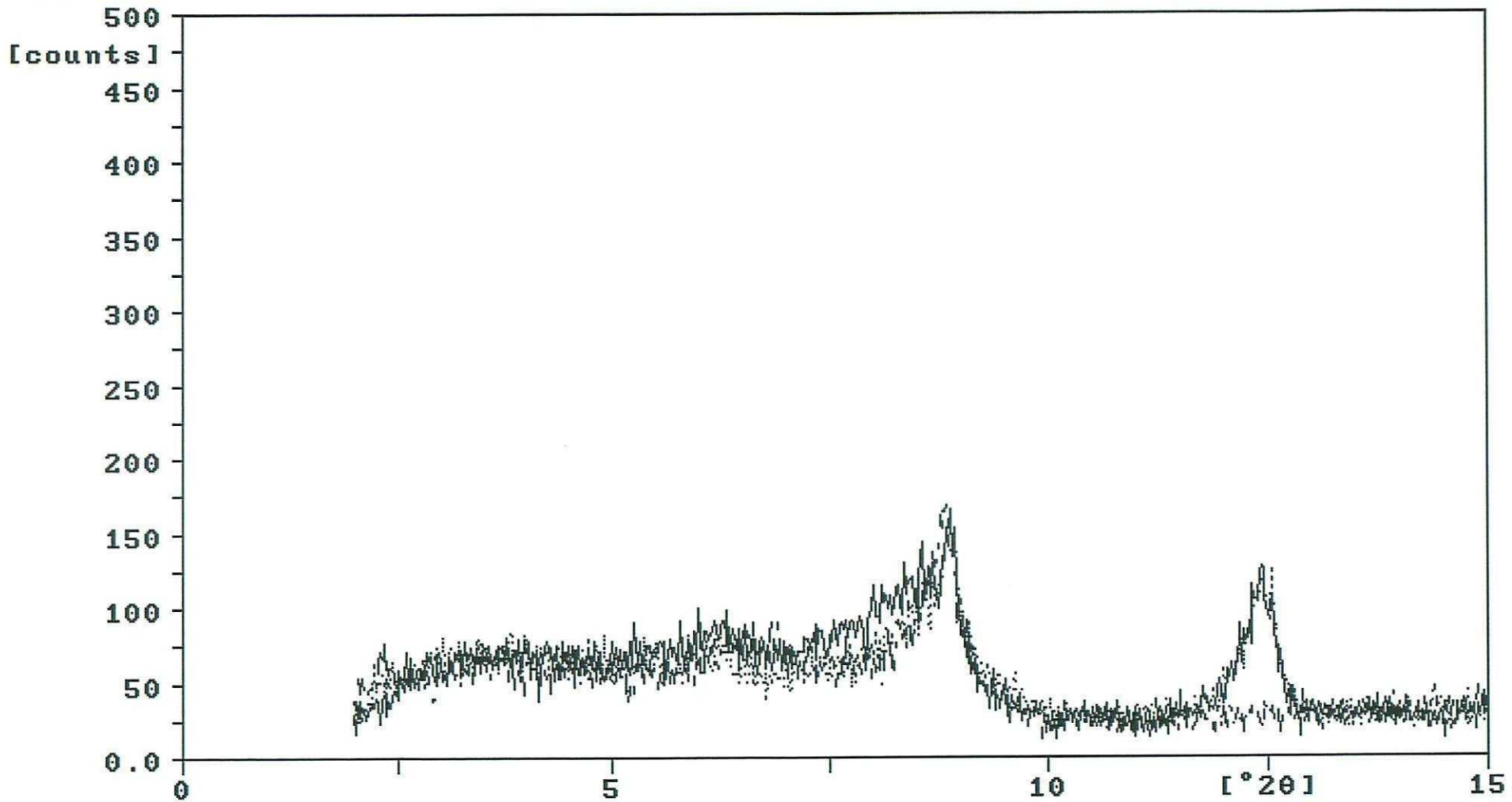

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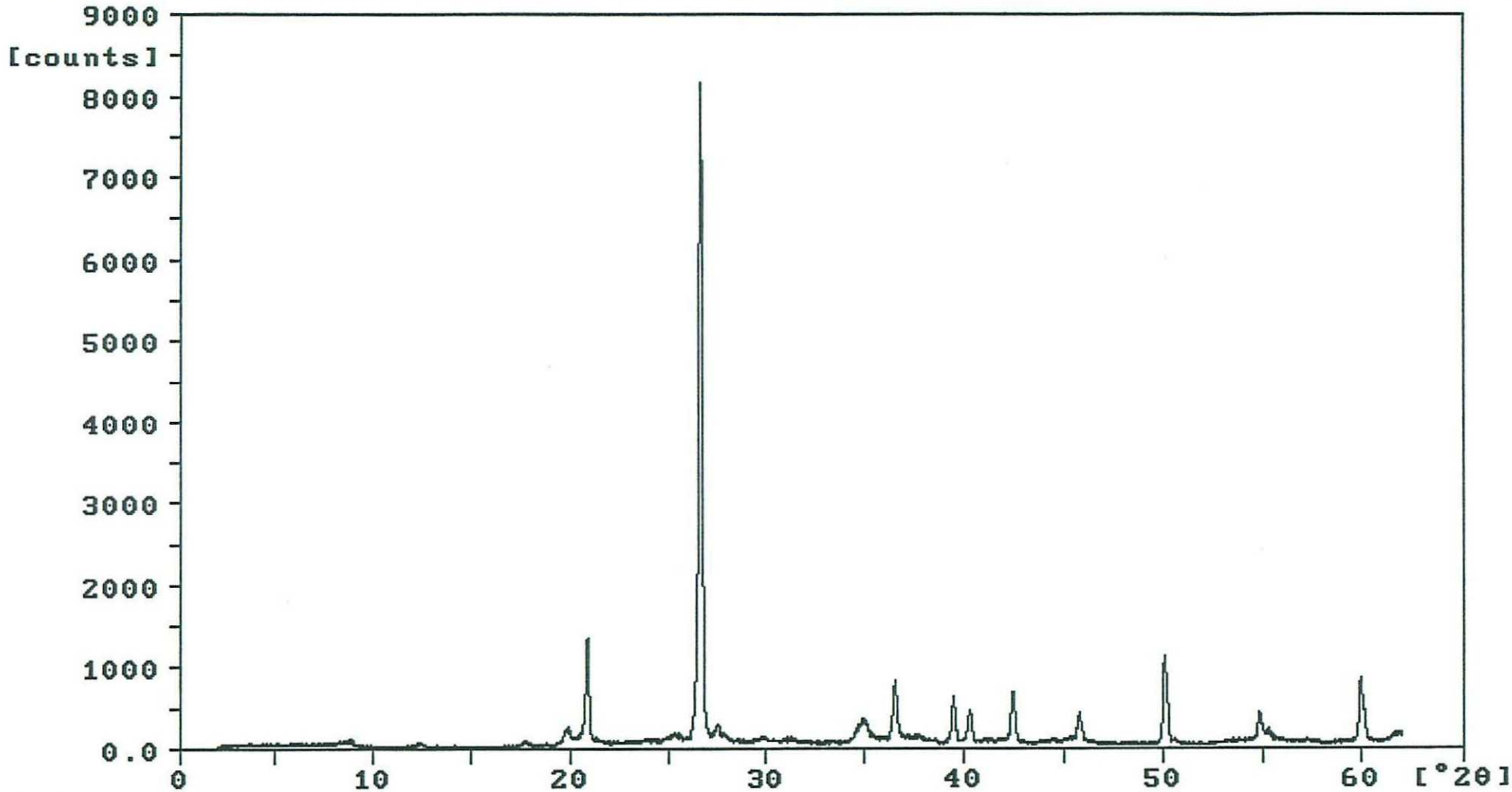

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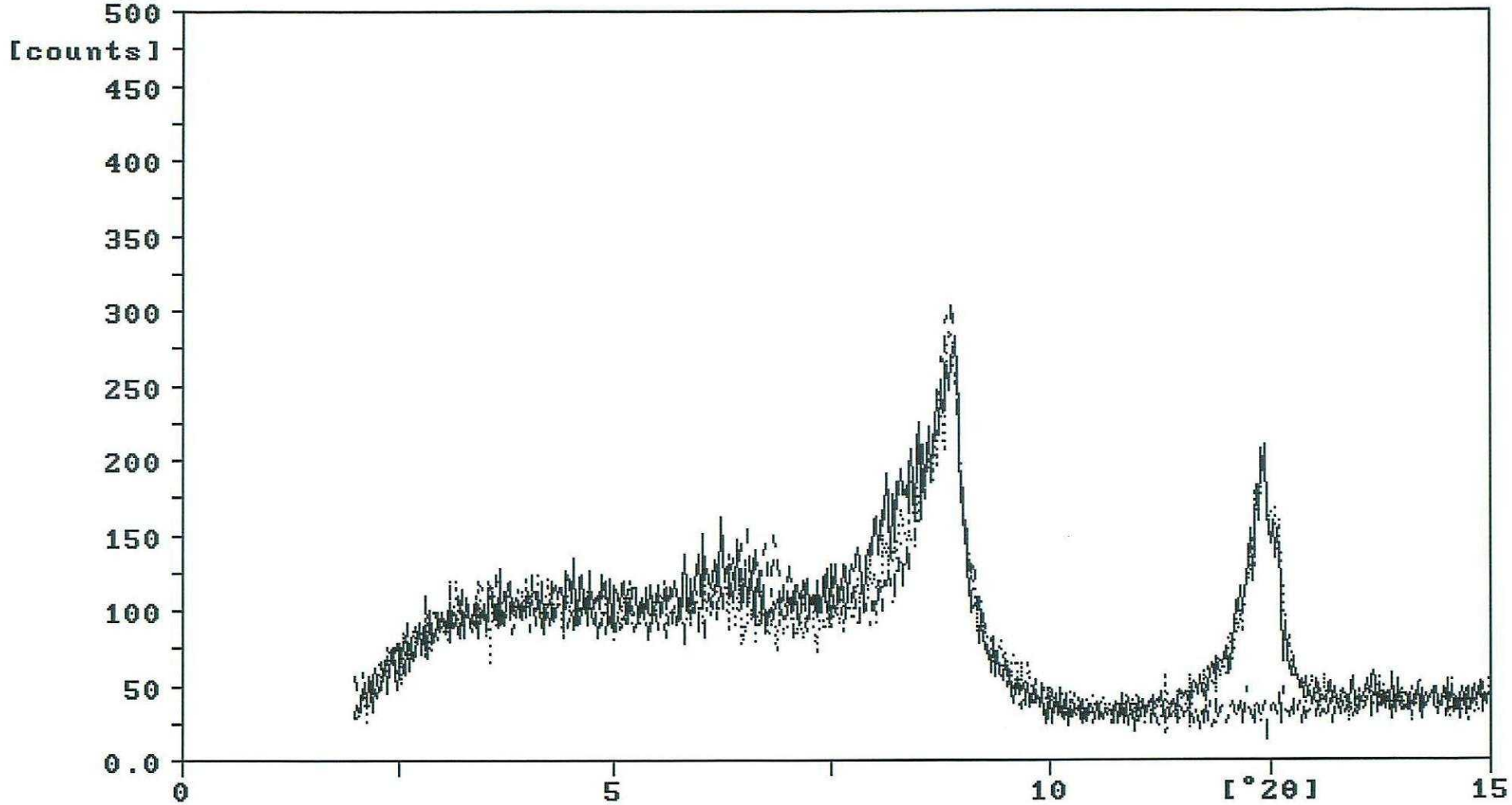

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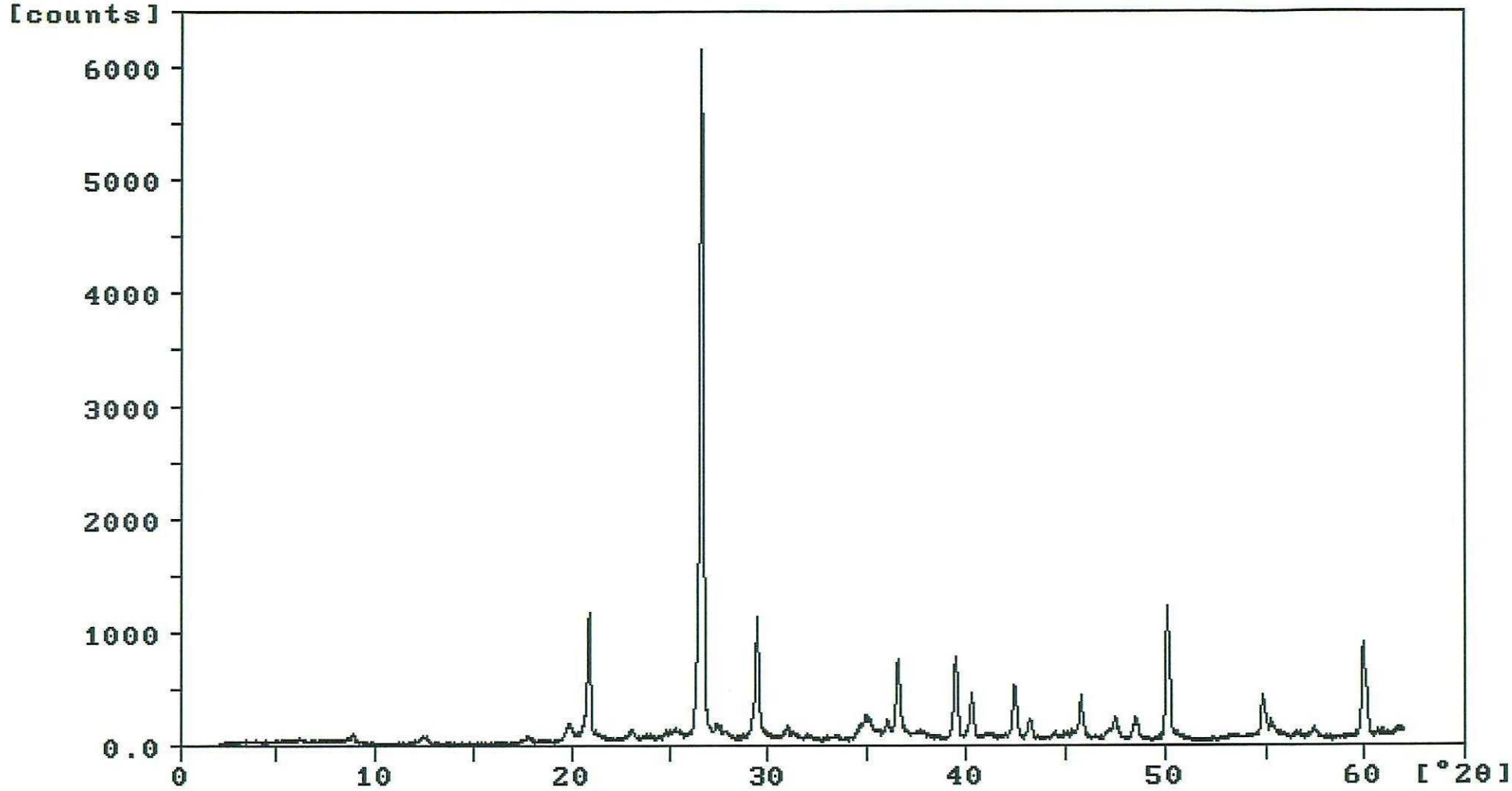
Sample identification: HOJA 14-11 IGHE-0201 4-dec-1995 9:28



95360-12.RD

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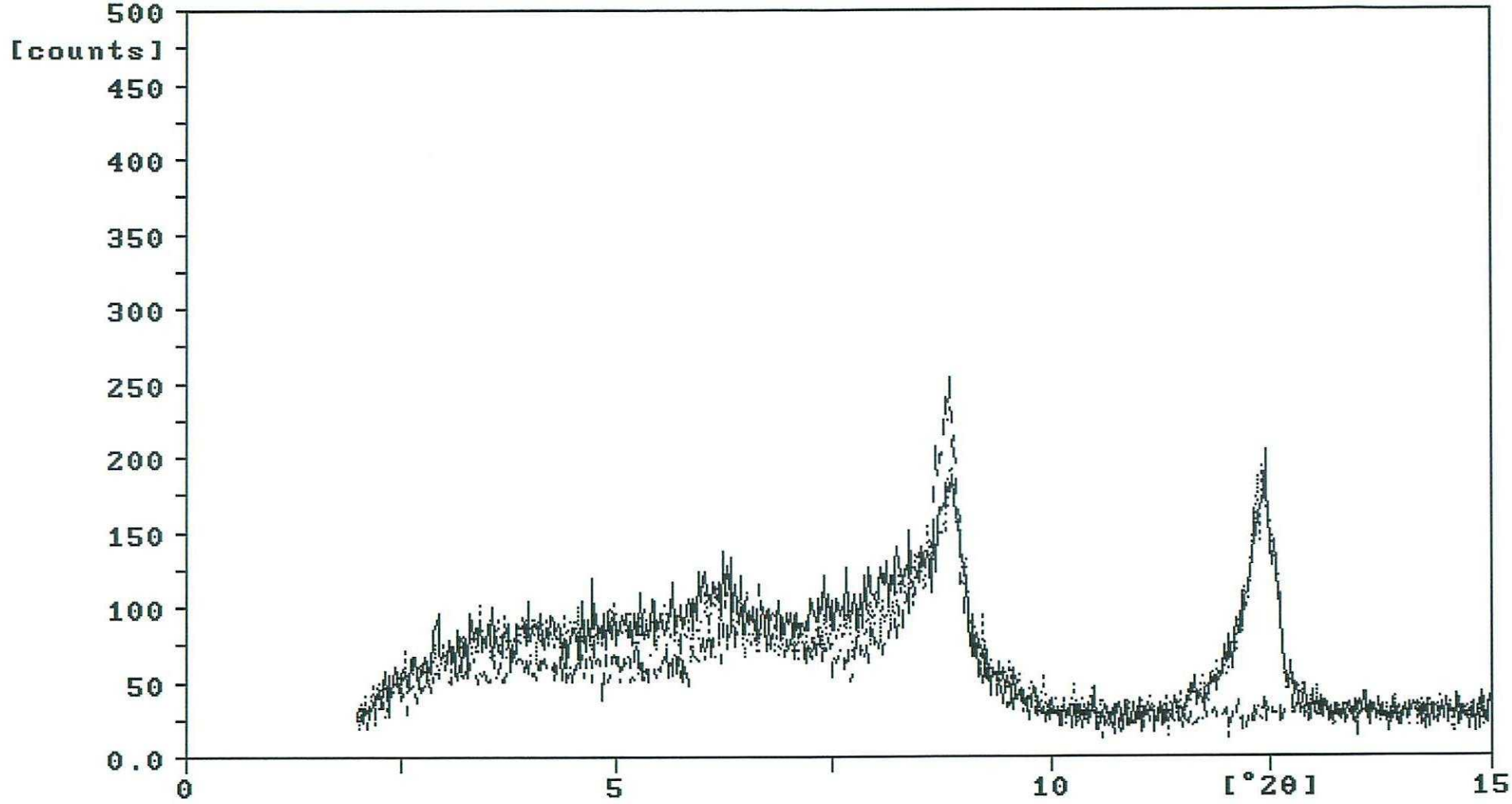

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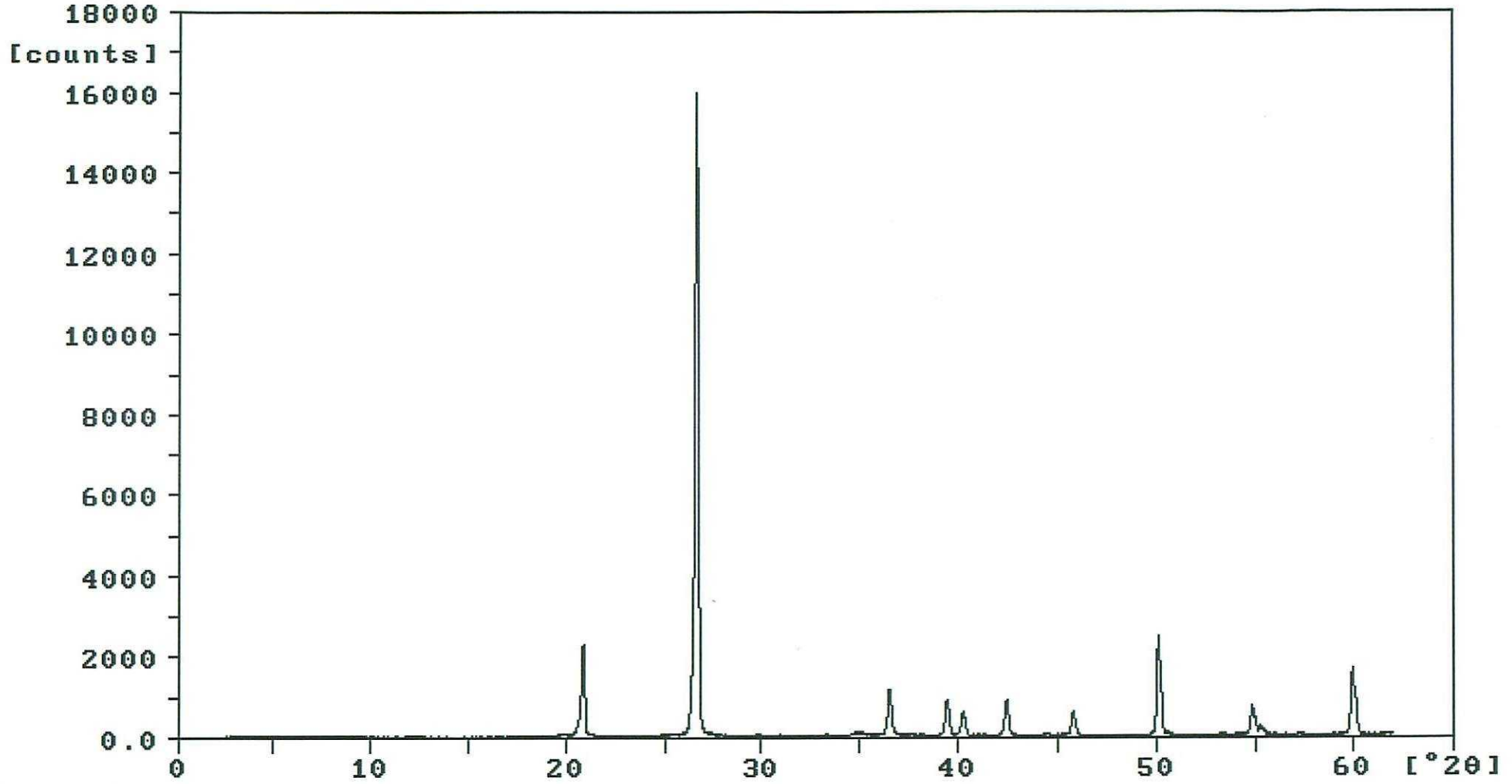

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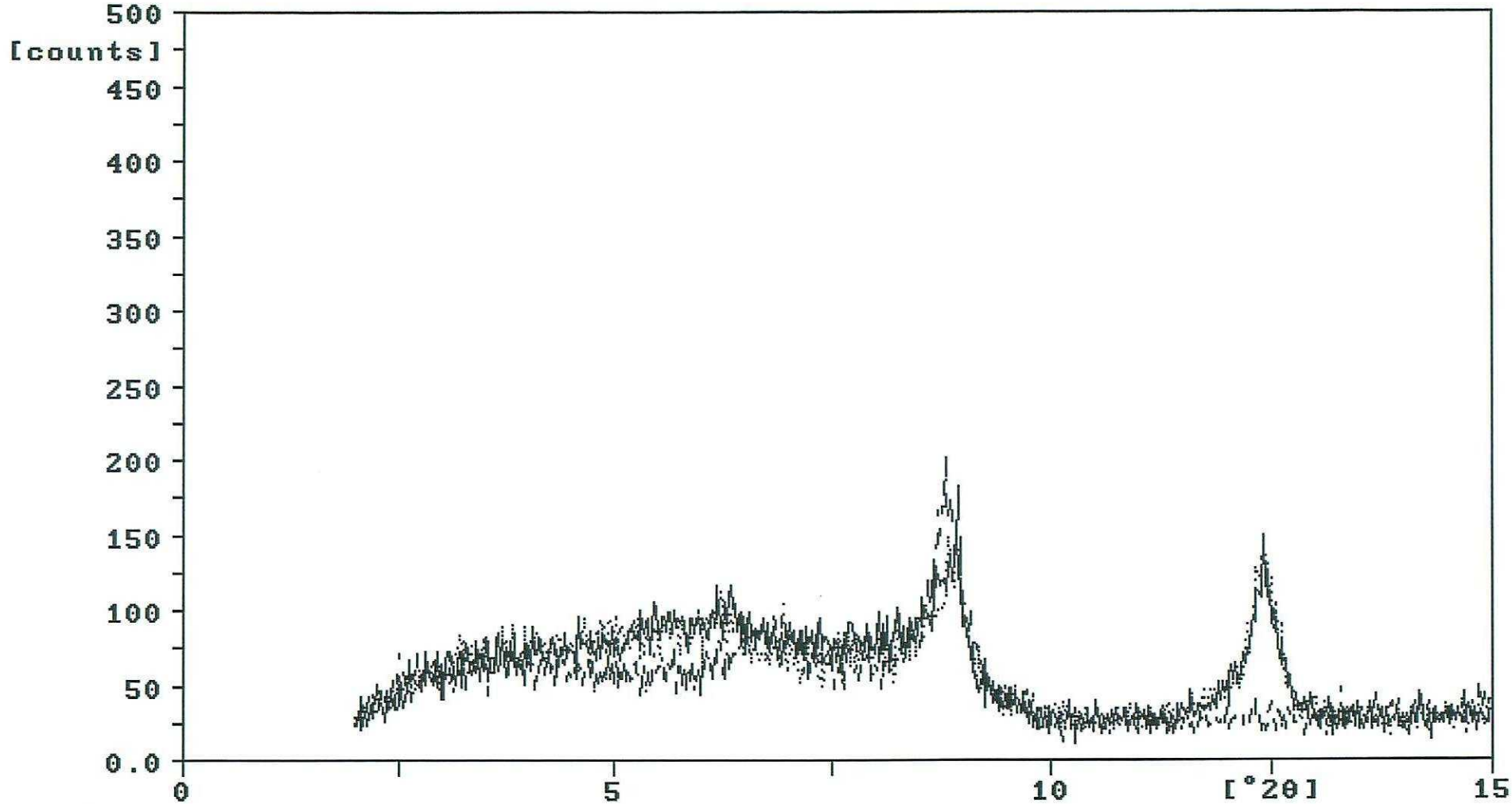

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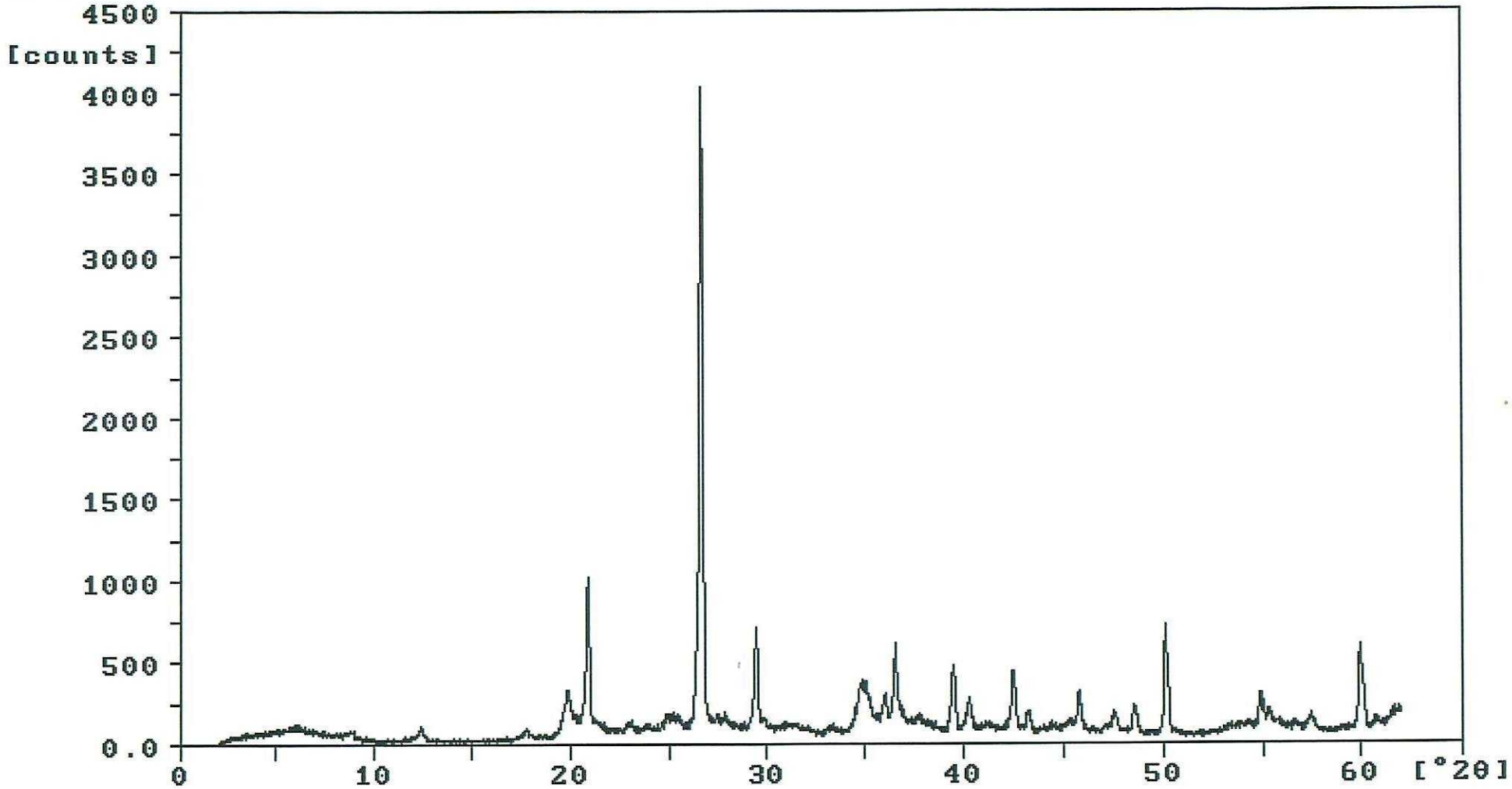

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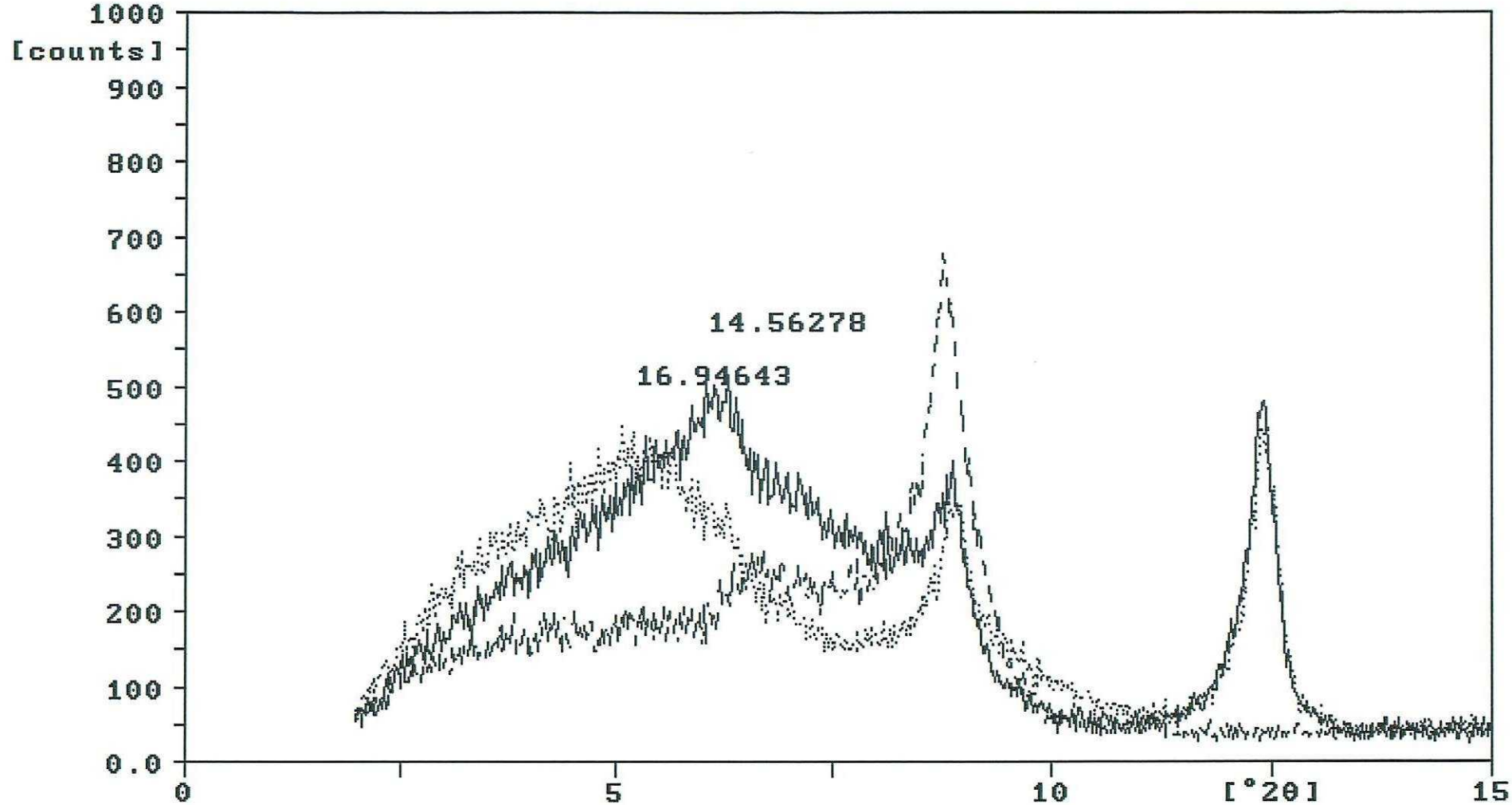

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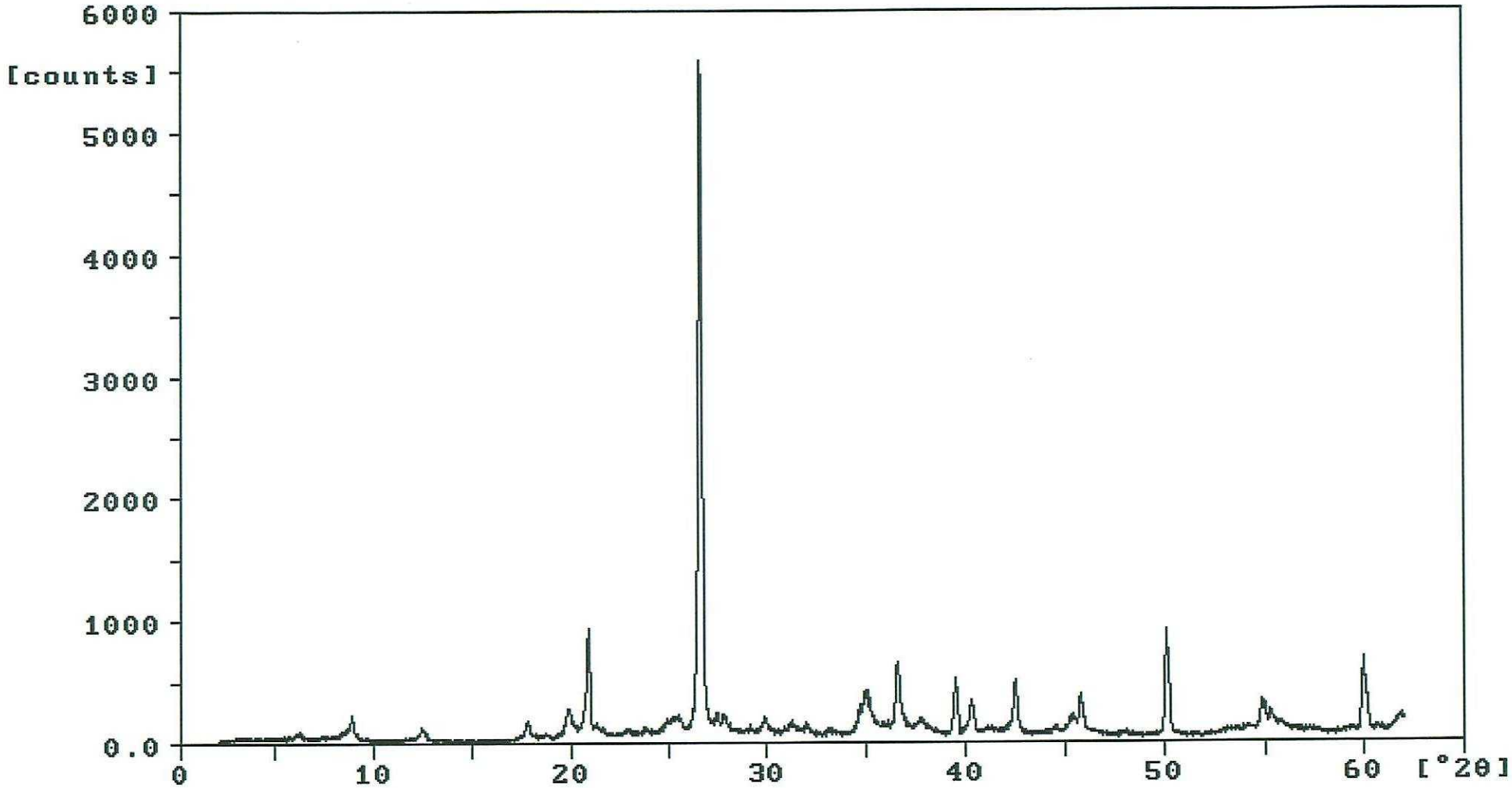

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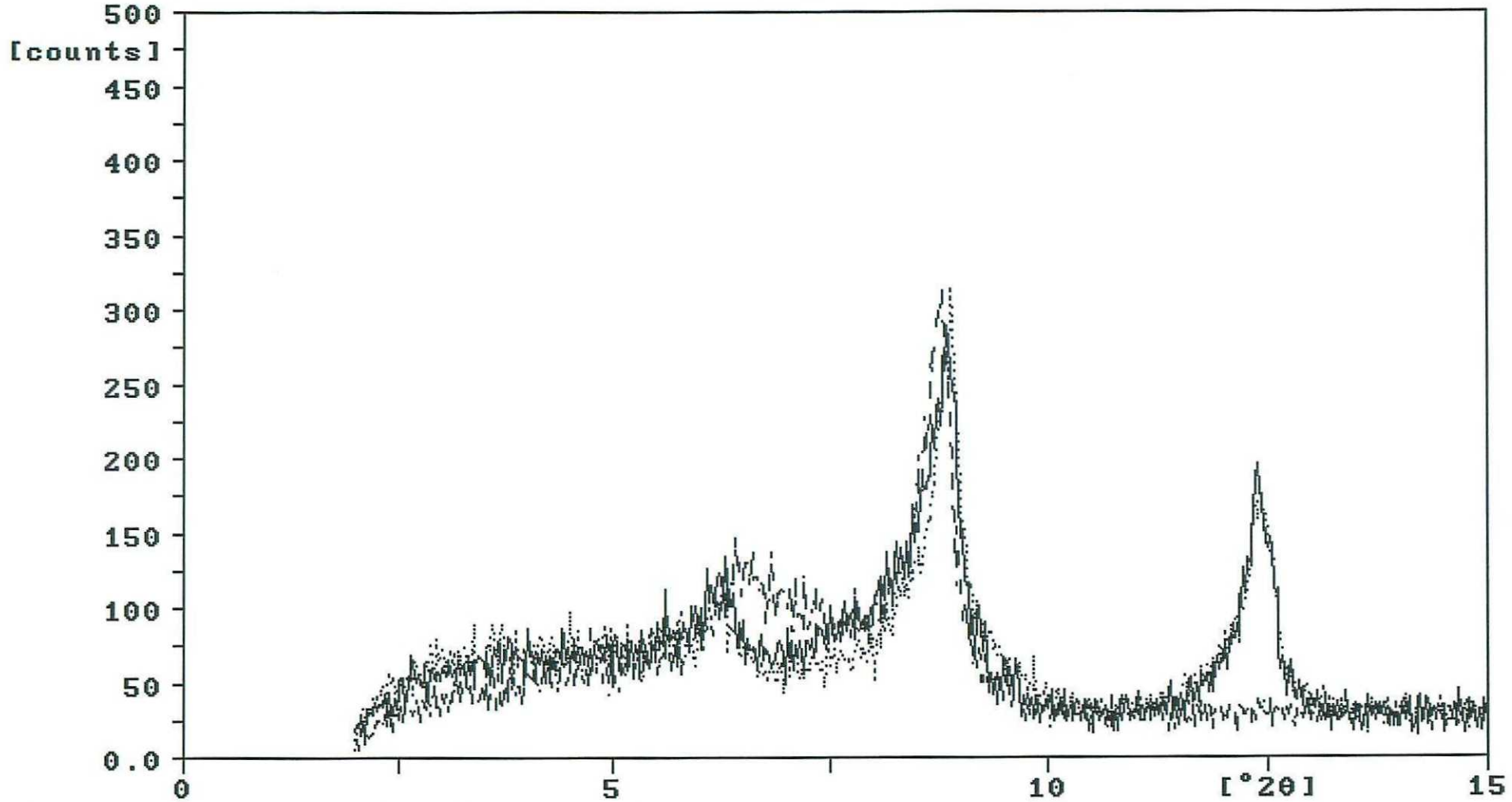
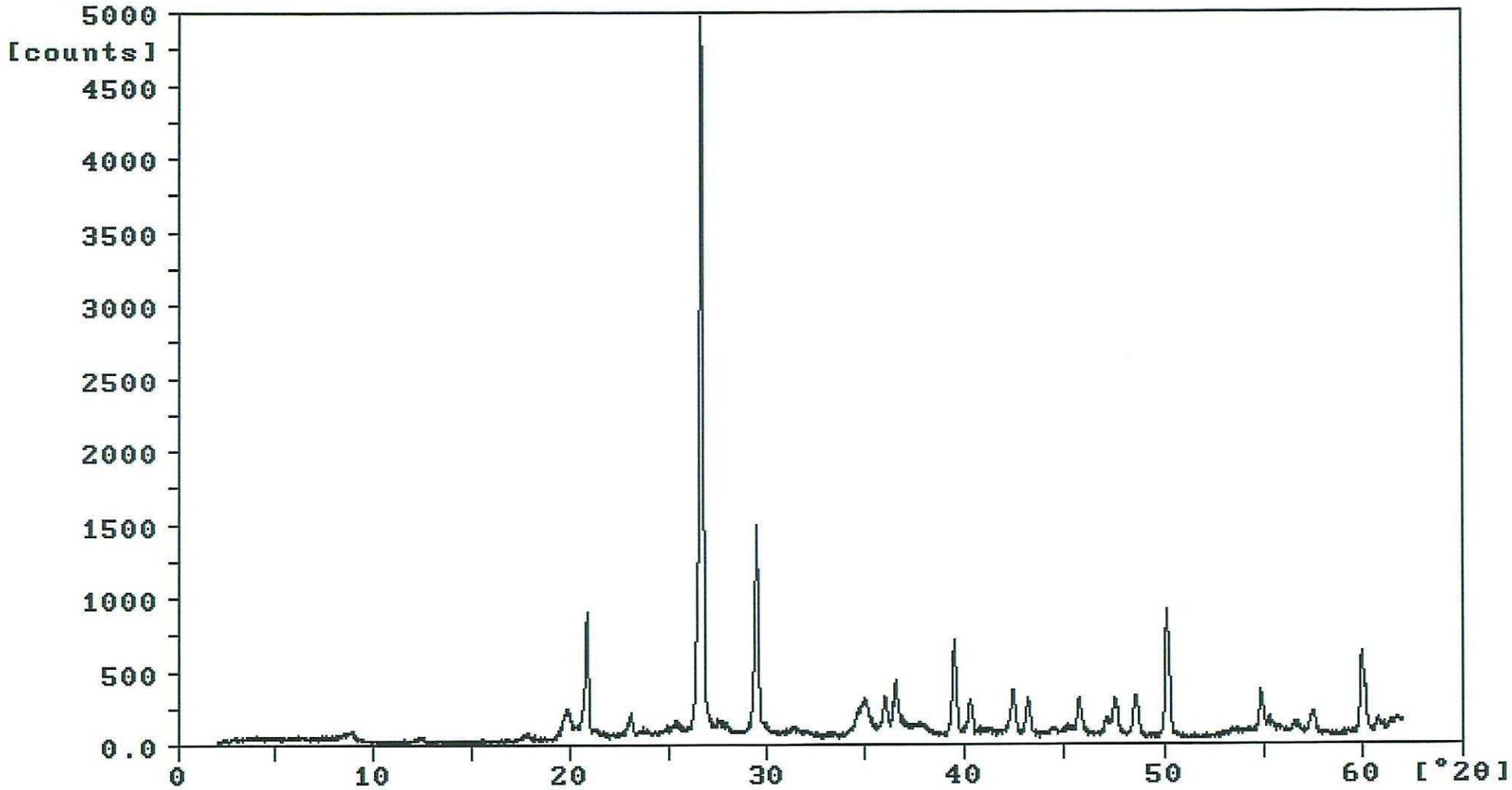


360-19A.RD 360-19E.RD 360-19T.RD

Sample identification: HOJA 15-11 IGHE-0101 4-dec-1995 10:03



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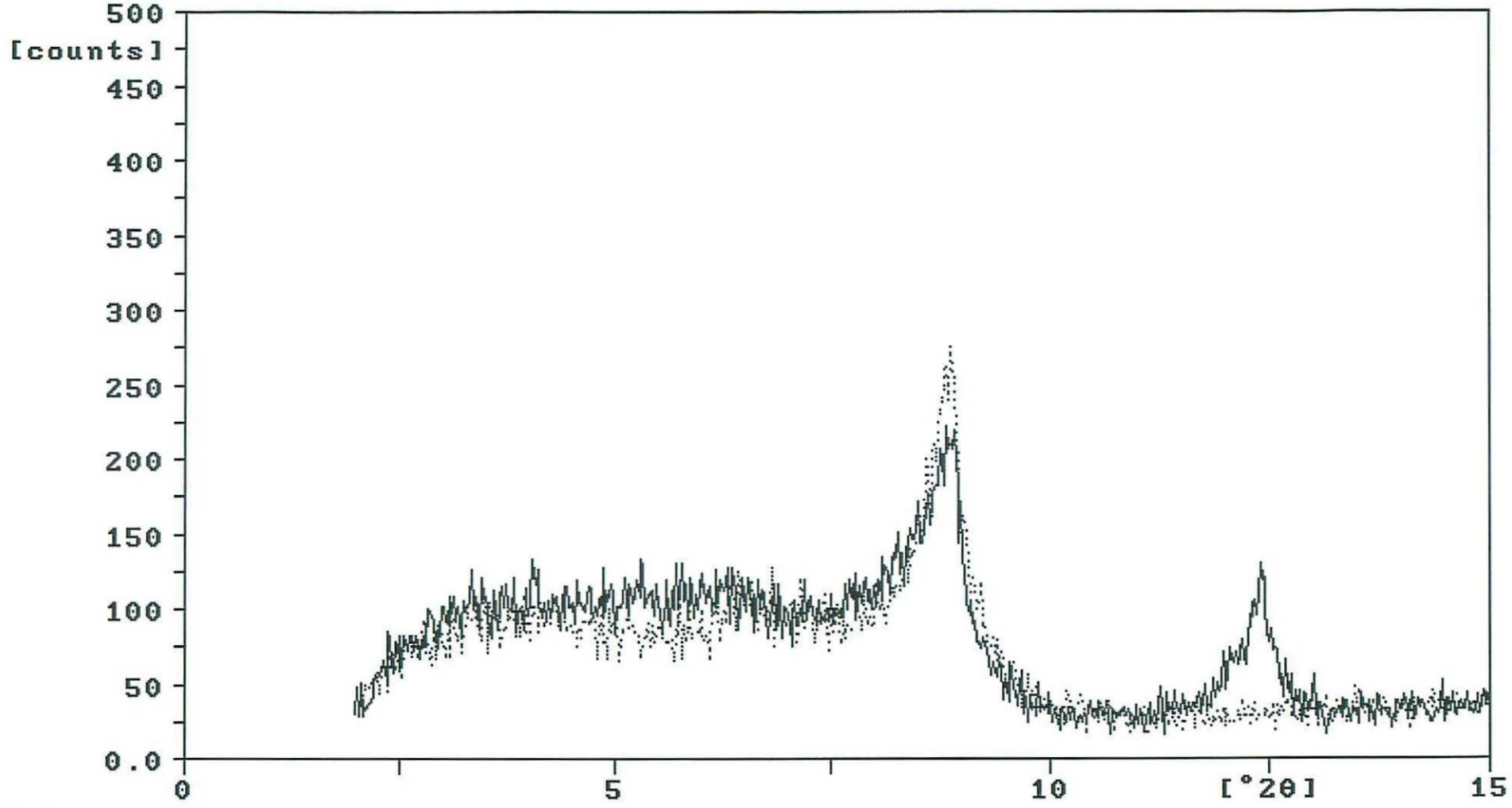
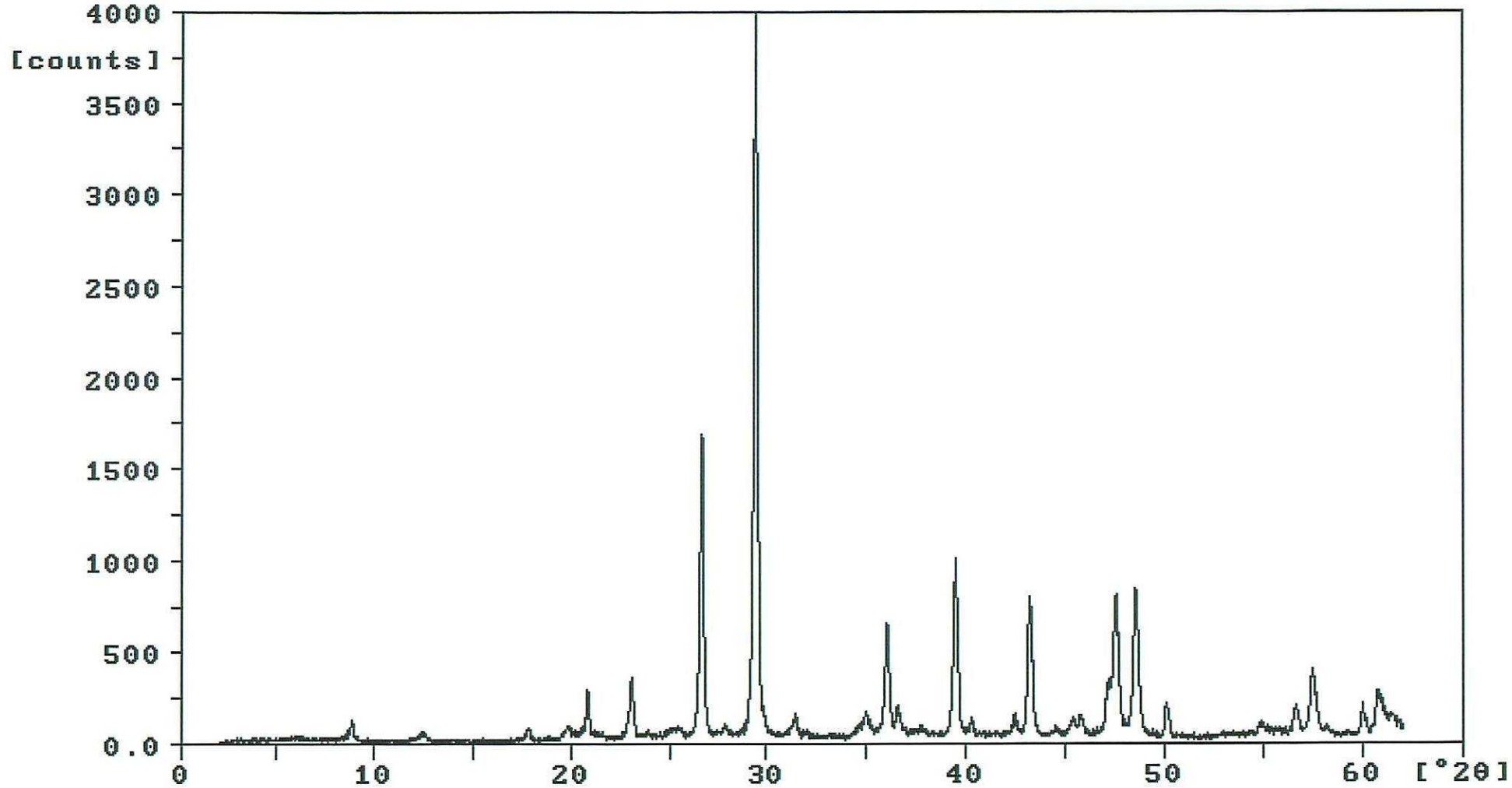


360-20A.RD 360-20T.RD

Sample identification: HOJA 15-11 IGHE-0201 4-dec-1995 10:09



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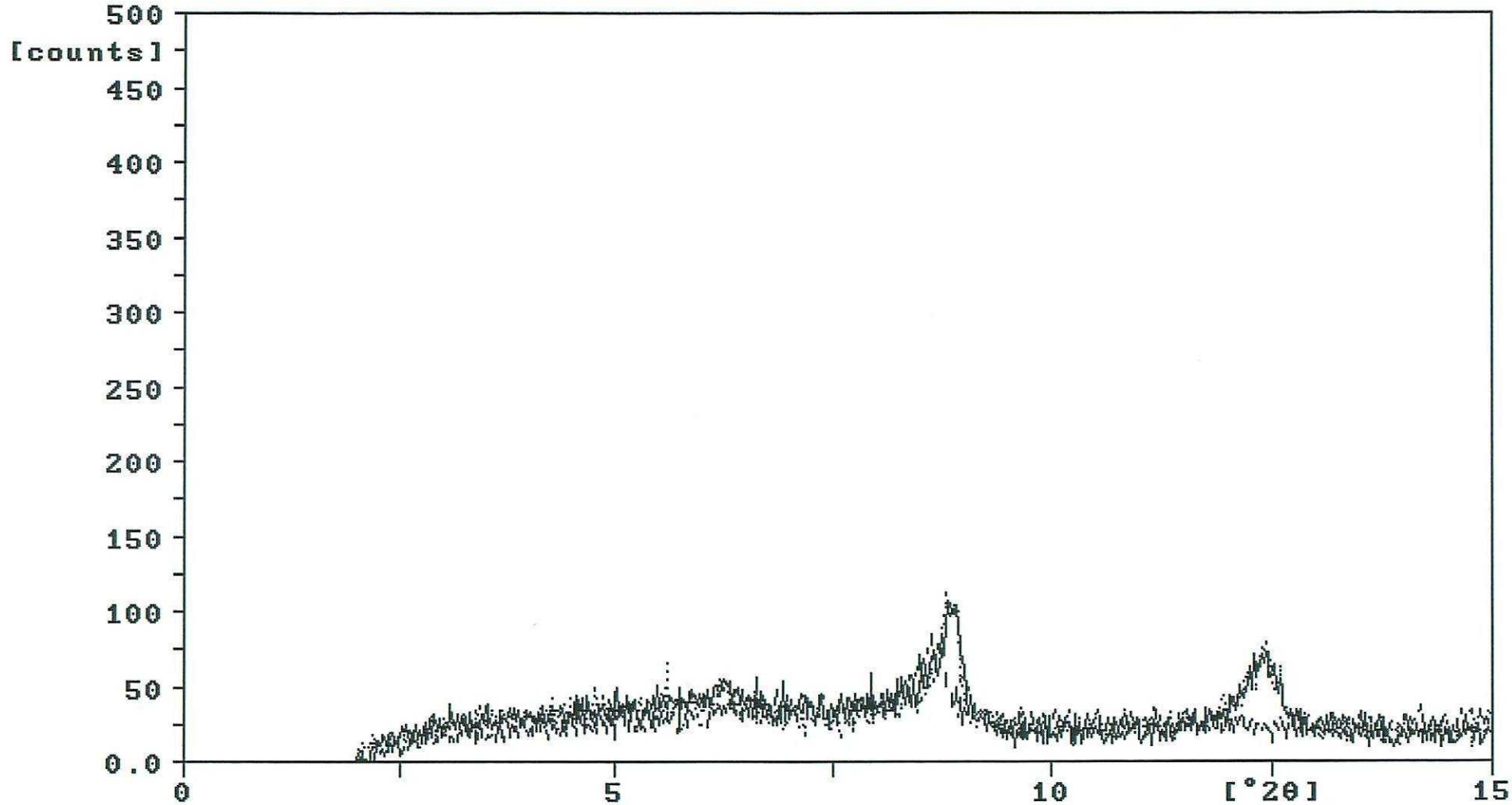
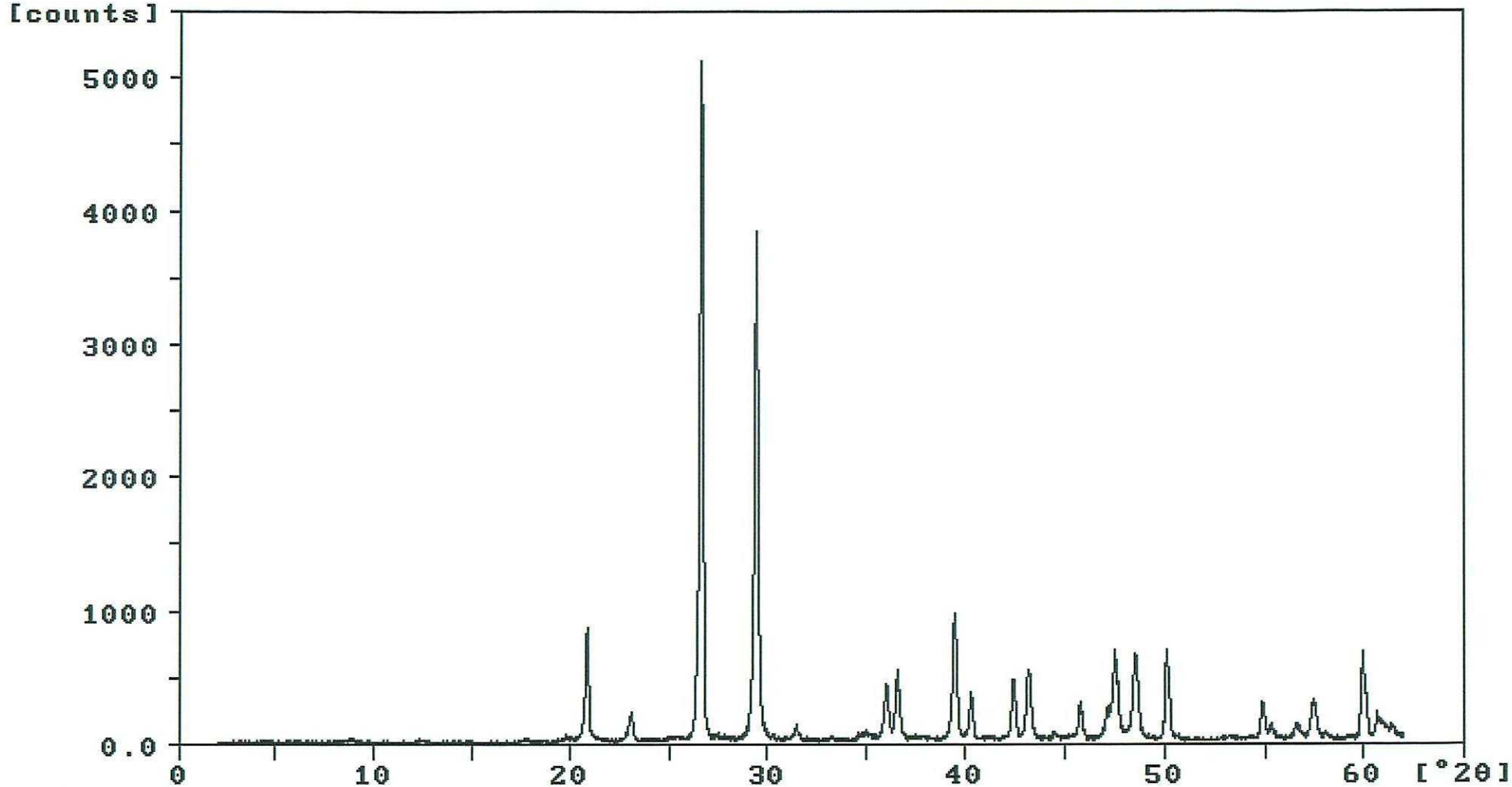


360-21A.RD 360-21E.RD 360-21T.RD

Sample identification: HOJA 15-11 IGHE-0202 4-dec-1995 10:11



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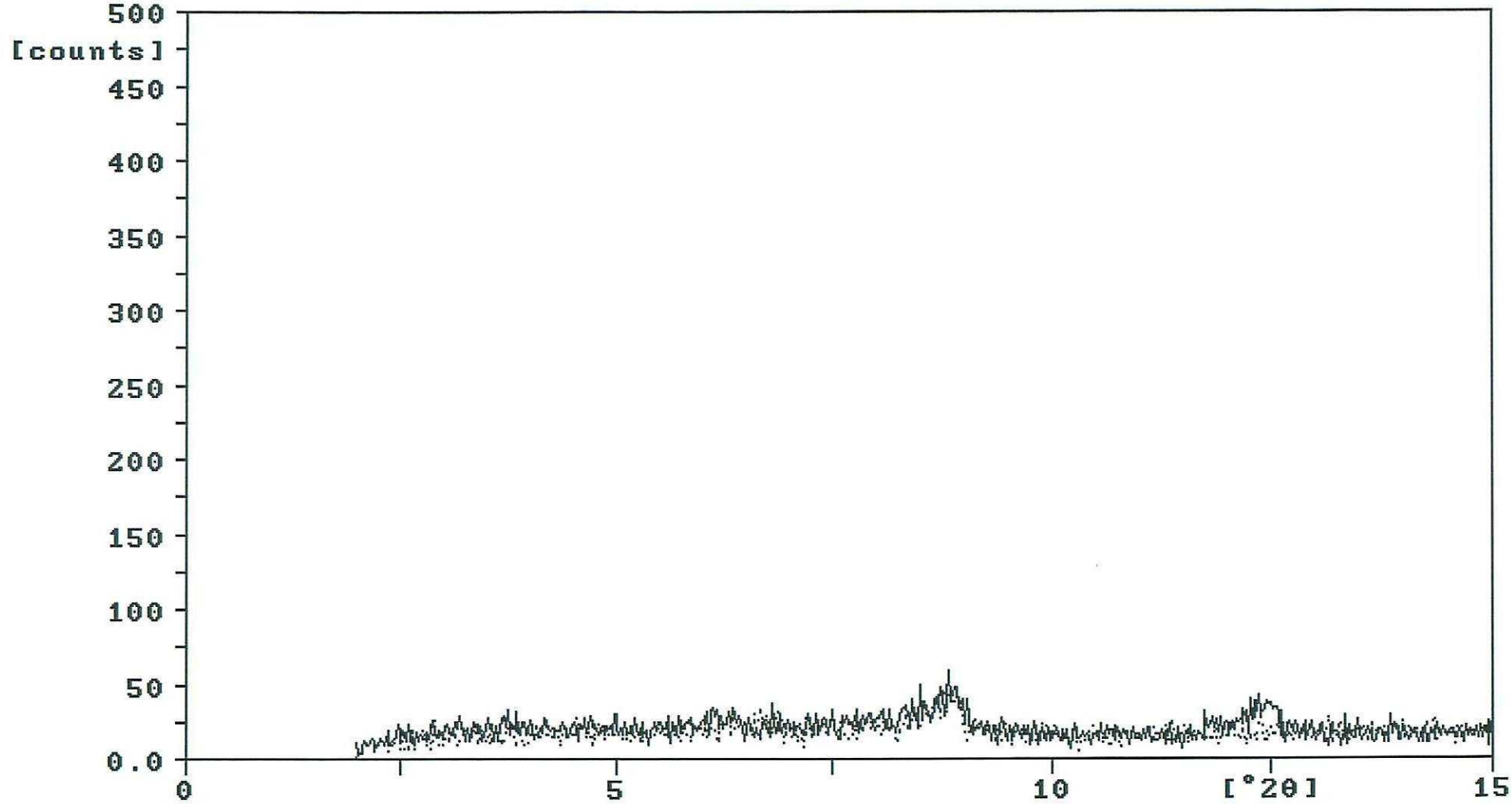
Sample identification: H15-11 IGHE-0202 4-dec-1995 10:13



360-22A.RD 360-22T.RD

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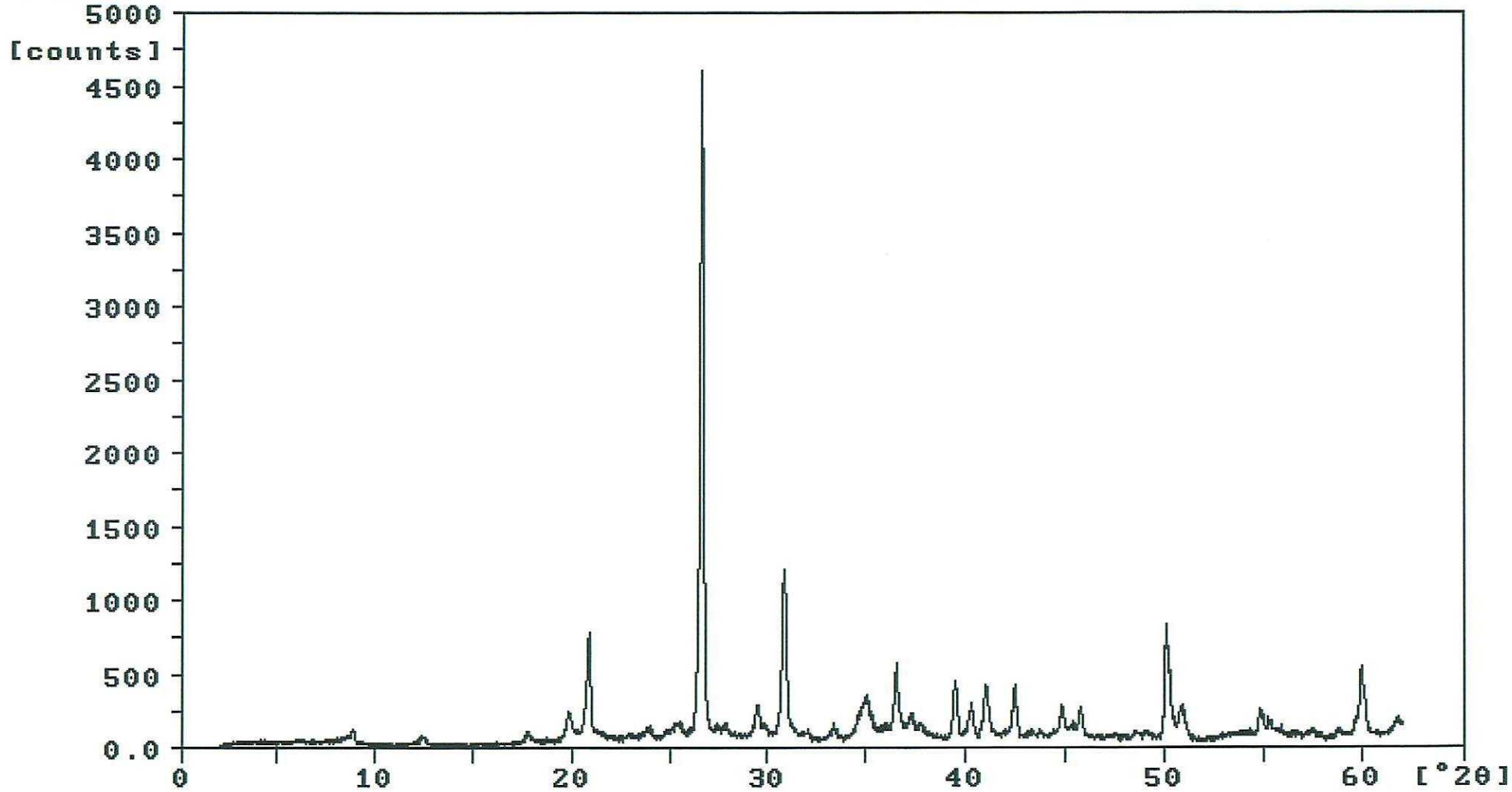

95360-23.RD

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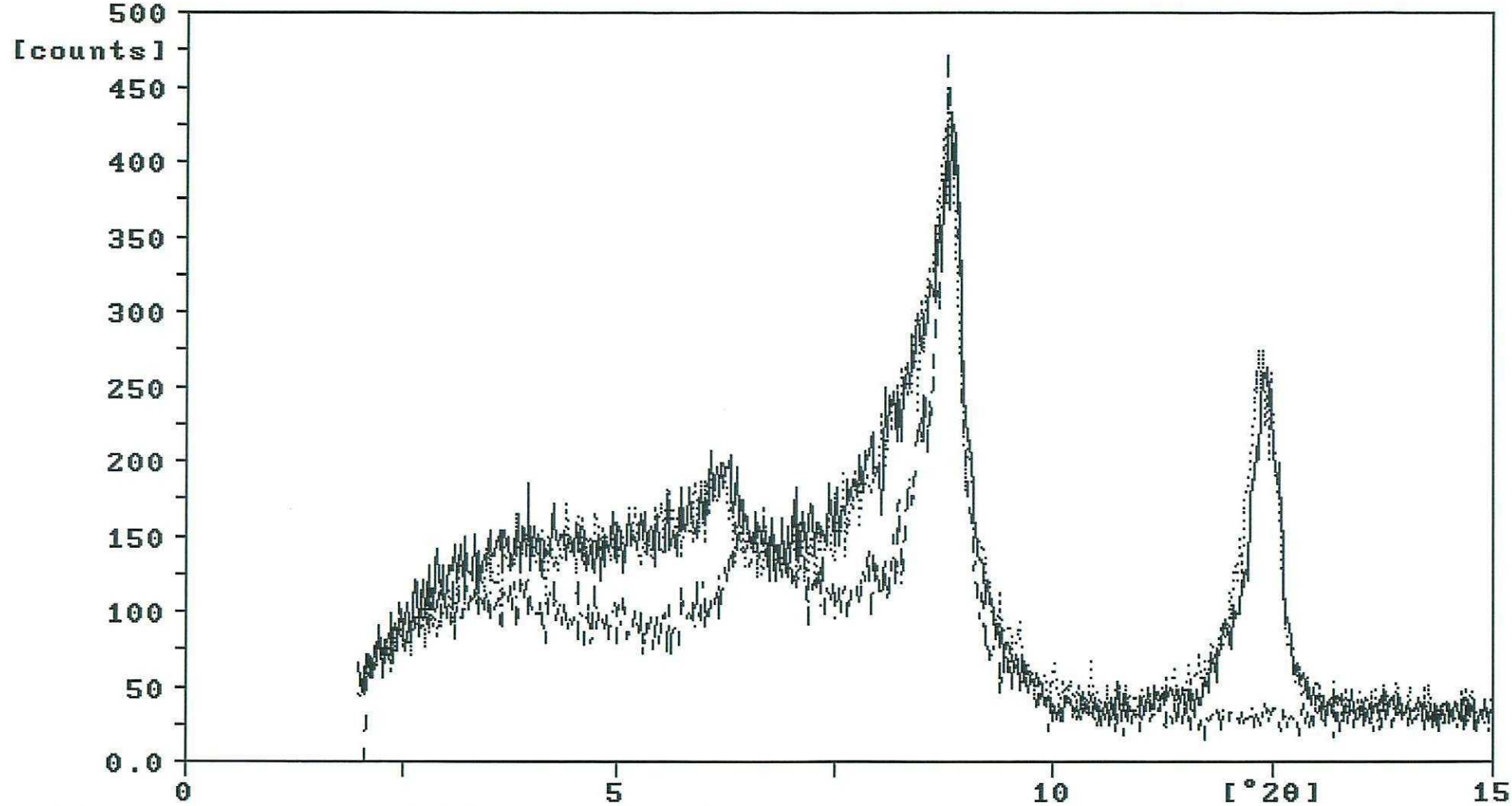

360-23A.RD 360-23E.RD 360-23T.RD