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LAMPIRAN

LAMPIRAN 1
PERHITUNGAN PENGENCERAN ASAM KLORIDA (HCl)

Pengenceran Asam Klorida (HCl)

M1 = 10.3

*Larutan 1 M

$M_1V_1 = M_2V_2$

$10.3 \times V_1 = 1 \times 100$ mL

$V_1 = \frac{1\ x\ 100mL}{10.3}$

= 9.71 mL

*Larutan 2 M

$M_1V_1 = M_2V_2$

$10.3 \times V_1 = 2 \times 100$ mL

$V_1 = \frac{2\ x\ 100mL}{10.3}$

= 19.42 mL

*Larutan 3 M

$M_1V_1 = M_2V_2$

$10.3 \times V_1 = 3 \times 100$ mL

$V_1 = \frac{3\ x\ 100mL}{10.3}$

= 29.13 mL

*Larutan 4 M

$M_1V_1 = M_2V_2$

$10.3 \times V_1 = 4 \times 100$ mL

$V_1 = \frac{4\ x\ 100mL}{10.3}$

= 38.83 mL

LAMPIRAN 2
HASIL ANALISIS *ATOMIC ABSORPTION SPECTROMETER* (AAS)

LABORATORIUM PENELITIAN DAN PENGEMBANGAN SAINS
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS HASANUDDIN
Jl. Perintis Kemerdekaan Km. 10 Tamalanrea, Makassar 90245
Telp. 0411-586016 • Fax. 0411-588551 • Email : lpps.fmipa.unhas@gmail.com

KAN
Komite Akreditasi Nasional
Laboratorium Penguji
LP-1484-IDN

LAPORAN HASIL PENGUJIAN

CERTIFICATE OF ANALYSIS

Nomor Pekerjaan : **LPPS.AJ-2312-11/9**
Job Number

Dipersembahkan Kepada
Presented To

Kepada Yth *Attention*	**: Amalia Ramadani**	**Jabatan** *Job Title*	**: Peneliti**
Nama Pelanggan *Customer Name*	**: Amalia Ramadani**	**Tujuan Pengujian** *Purpose of analysis*	**: Analisis Logam**
Alamat/Universitas *Address/University*	**: Jl. Poros Malino, Kec. Bontomarannu**	**No. Faks/** *Fax No.*	: -
Tanggal Sampel Diterima *Date of Sample Receipt*	**: 19 Desember 2023**	**No. Telp./** *Phone No.*	**: 081258394308**
Email *Email*	**: misamaliar10@gmail.com**	**Tanggal Sampel Dianalisis** *Date of Sample Analysed*	**: 22 Desember 2023 – 11 Januari 2024**
Nama Pengujian *Name of analysis*	**: Analisis Magnesium (Mg) pada Larutan dan Padatan Dolomit Menggunakan AAS**	**Total Halaman** *Total of pages*	**: 2**

Hasil hanya berhubungan dengan contoh yang diuji dan laporan ini tidak boleh digandakan kecuali seluruhnya.
The result relate only to the samples tested and this report shall not be reproduced except in full

LABORATORIUM PENELITIAN DAN PENGEMBANGAN SAINS
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LAPORAN HASIL PENGUJIAN
CERTIFICATE OF ANALYSIS

Nomor Pekerjaan : LPPS.AJ-2312-11/9

I. Pelanggan / ***Principal***

1.1 Nama / *Name* : Amalia Ramadani
1.2 Alamat / *Address* : Jln. Poros Malino, Kec. Bontomarannu
1.3 Telepon / *Phone* : 081258394308
1.4 Personil Penghubung / *Contact Person* : -
1.5 Email / *Email* : misamaliar10@gmail com

II. Contoh Uji / ***Sample***

2.1 Kode Sampel / *Sampel Code* : LPPS.A-2312-11/9a – 9i
2.2 Kemasan / *Packaging* : Botol Plastik dan Plastik Sampel
2.3 Nama Sampel / *Sample Name* : Larutan (8) dan Padatan (1)
2.4 Jumlah Sampel / *Number of Sample* : 9
2.5 Tanggal Sampling / *Date of Sampling* : -
2.6 Diterima / *Date of Received* : 19 Desember 2023
2.7 Tanggal Uji / *Date of Analysis* : 12 Desember 2023 – 11 Januari 2024
2.8 Jenis Uji / *Type of Analysis* : Logam Mg AAS

III. Hasil Uji / ***Result***

Kode Sampel	Nama Sampel	Satuan	Konsentrasi Logam Mg
LPPS.A-2312-11/9a	AR-1	mg/L	3428.39
LPPS.A-2312-11/9b	AR-2	mg/L	31985.53
LPPS.A-2312-11/9c	AR-3	mg/L	20717.17
LPPS.A-2312-11/9d	AR-4	mg/L	41732.28
LPPS.A-2312-11/9e	AR-5	mg/L	1723.77
LPPS.A-2312-11/9f	AR-6	mg/L	19929.77
LPPS.A-2312-11/9g	AR-7	mg/L	30825.71
LPPS.A-2312-11/9h	AR-8	mg/L	25356.46
LPPS.A-2312-11/9i	Sampel awal	mg/kg	191583.26

Makassar, 16 Januari 2024
Penanggung Jawab Mutu

Prof. Dr. Nunuk Hariani Soekamto, MS
NIP. 19601215 198702 2 001

Jji hanya berlaku untuk contoh tersebut di atas
ng mengutip/menyalin sebagian isi hasil uji ini

LAB. PPS FMIPA UNHAS	FORMULIR NO: FSOP-7.8-LPPS-FMIPAUH-01.4	Tanggal Berlaku : 1 April 2019
	REKAMAN HASIL ANALISIS	Edisi/Revisi Ke : 1/0
		Halaman : 1/3

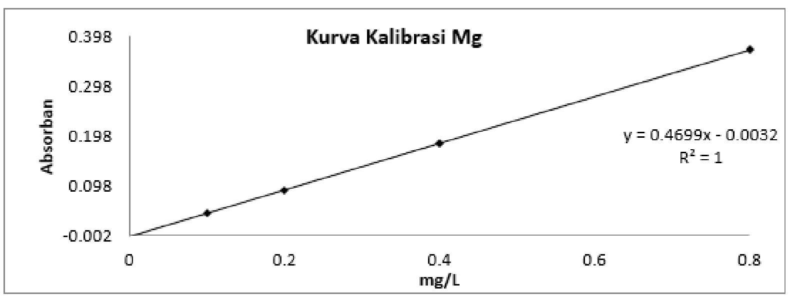
REKAMAN HASIL ANALISIS

Nomor Pekerjaan : LPPS.A-2312-11/9a – 9i
Tanggal Penerimaan : 19 Desember 2023
Tanggal Analisis : 22 Desember 2023 – 11 Januari 2024
Suhu Ruangan : 21,9 °C
Kelembapan Ruangan : 59% RH

1. Analisis Logam Magnesium (Mg)

Optimasi Analisa Magnesium (Mg)		
Type Alat: AA 7000 Shimadzu : ASC-7000 HCL Mg Hamamatsu P. gelombang : 285.2 nm Lamp Current Low (Peak) (mA) : 8	Slit width : 0.7 nm Flame type : Air-C_2H_2 Burner Height : 7,0 nm Burner angle : 0 degree	Fuel Gas Flow Rate (0.8-4.0) : 1.8 L/min Support gas flow rate (13.5-17. : 15 L/min P. Gelombang Max : 285.20 nm

Mg (mg/L)	Absorban
0	-0.0022
0.1	0.0439
0.2	0.0892
0.4	0.1850
0.8	0.3730



Persyaratan		Hasil	Keterangan keberterimaan hasil
Linearitas (r)	≥ 0.99	1.0000	Memenuhi
%R	75%-120%	99.91	Memenuhi

R^2= 1
r= 1

Kontrol sampel	Absorban	[Mg] mg/L
Mg 0.2 mg/L	0.0913	0.20
	0.0901	0.20
Rata-rata	0.0907	0.20

Kontrol	Absorban	[Mg] mg/L	fp (kali)	[Mg] mg/L
Blanko	0.0533	0.12	1000	119.92
	0.0530	0.12		
Rata-rata	0.0532	0.1199		

Kadar Air Kode Sampel	B. Cawan Kosong (G)	Berat Sebelum Pemanasan (G)	B. Sampel (B. Basah) (G)	Berat setelah Pemanasan (G)	B. Sampel (B. Kering) (G)	Kadar Air (%)
LPPS.A.2312-11/9i	30.4746	30.9751	0.5005	30.9734	0.4988	0.34

rat sampel peleburan	B. Cawan Kosong (G)	B. Cawan+sampel sblm di+pelebur (G)	B. Sampel (B. kering) (G)	B.cawan+sampel +pelebur sblm dilebur (G)	B.cawan+sampel +pelebur setelah dilebur (G)	Berat sampel setelah dilebur (G)
9i	30.4746	30.9734	0.4988	32.4784	31.5478	1.0732

Kode Sampel	Absorban	[Mg] (mg/L)	fp (kali)	[Mg] x fp (mg/L)	([Mg] x fp) - [Blanko]	Berat sebelum peleburan (g)	V. Sampel (L)	Kadar Mg (mg/kg= ppm)	[Mg] dilaporkan (mg/kg= ppm)
LPPS.A.2312-11/9i	0.0918	0.20							
	0.0933	0.21	10000	2037.67	1917.7485	0.5005	0.05	191583.26	191583.26
Rata-Rata =	**0.0926**	**0.2038**							

Kode Sampel	Absorban	[Mg] (mg/L)	fp (kali)	[Mg] x fp (mg/L)	[Mg] yang dilaporkan (mg/L=ppm)
LPPS.A.2312-11/9a	0.1580	0.34			
	0.1578	0.34	10000	3428.39	3428.39
Rata-Rata =	**0.1579**	**0.3428**			

Kode Sampel	Absorban	[Mg] (mg/L)	fp (kali)	[Mg] x fp (mg/L)	[Mg] yang dilaporkan (mg/L=ppm)
LPPS.A.2312-11/9b	0.1478	0.32			
	0.1464	0.32	100000	31985.53	31985.53
Rata-Rata =	**0.1471**	**0.3199**			
LPPS.A.2312-11/9c	0.0940	0.21			
	0.0943	0.21	100000	20717.17	20717.17
Rata-Rata =	**0.0942**	**0.2072**			
LPPS.A.2312-11/9d	0.1930	0.42			
	0.1928	0.42	100000	41732.28	41732.28
Rata-Rata =	**0.1929**	**0.4173**			
LPPS.A.2312-11/9e	0.0047	0.02			
	0.0051	0.02	100000	1723.77	1723.77
Rata-Rata =	**0.0049**	**0.0172**			
LPPS.A.2312-11/9f	0.0907	0.20			
	0.0902	0.20	100000	19929.77	19929.77
Rata-Rata =	**0.0905**	**0.1993**			
LPPS.A.2312-11/9g	0.1414	0.31			
	0.1419	0.31	100000	30825.71	30825.71
=	**0.1417**	**0.3083**			
	0.1166	0.25			
	0.1153	0.25	100000	25356.46	25356.46
=	**0.1160**	**0.2536**			

Perhitungan

$$mg/kg = \frac{\text{konsentrasi (mg/L) x Volume (mL)}}{\text{berat sampel (g)}}$$

$$\% = \frac{\text{konsentrasi (mg/L) x Volume (L)}}{\text{berat sampel (mg)}} \text{ x } 100\%$$

$$\text{Kadar Air} = \frac{\text{(berat cawan kosong + sampel setelah pemanasan - berat cawan kosong + sampel sebelum pemanasa}}{\text{berat sampel (g)}} \text{ x } 100\%$$

Makassar, 16 Januari 2024

Analis

Fibiyanthy, S.Si, M.Si
NIP. 19810202 200604 2 001

LAMPIRAN 3
PERHITUNGAN TINGKAT EKSTRAKSI Mg

Tingkat Ekstraksi Mg dihitung menggunakan rumus efisiensi pelindian dalam Dong *et al.*, (2023) pada persamaan 4 berikut:

$$\eta = \frac{C_i \; x \; V}{m \; x \; W_i} \; x \; 100$$

Dimana:

η = Tingkat Ekstraksi (%)

C_i = Konsentrasi logam (mg/L) dalam pregnant leach solution (PLS)

V = Volume PLS (L)

m = Massa sampel (Kg)

W_i = Kadar logam (mg/Kg)

Tingkat Ekstraksi Magnesium (Mg)

Volume PLS (V) = 0,005 L

Mass sampel (m) = 0,01 Kg

Kadar Mg (W_i) = 19.1583,26 mg/Kg

1. Tingkat Ekstraksi Magnesium pada kondisi pelindian 120 menit, 70°C, 1 M (C_i= 3.428,39 mg/L)

Tingkat Ekstraksi Mg (%) $= \frac{C_i \times V}{m \times W_i}$ x 100%

$= \frac{3.428,39 \times 0,005}{0,01 \times 19.1583,26}$ x 100%

= 8.95%

2. Tingkat Ekstraksi Magnesium pada kondisi pelindian 120 menit, 70°C, 2 M (C_i= 31.985,53 mg/L)

Tingkat Ekstraksi Mg (%) $= \frac{C_i \times V}{m \times W_i}$ x 100%

$= \frac{31.985,53 \times 0,05}{0,01 \times 19.1583,26}$ x 100%

= 83,48%

3. Tingkat Ekstraksi Magnesium pada kondisi pelindian 120 menit, 70°C, 3 M (C_i= 20.717,17 mg/L)

Tingkat Ekstraksi Mg (%) $= \frac{C_i \times V}{m \times W_i}$ x 100%

$$= \frac{20.717,17 \times 0,05}{0,01 \times 19.1583,26} \text{ x } 100\%$$

$$= 54,07\%$$

4. Tingkat Ekstraksi Magnesium pada kondisi pelindian 120 menit, 70°C, 4 M (C_i= 41.732,28 mg/L)

Tingkat Ekstraksi Mg (%) $= \frac{C_i \times V}{m \times W_i} \text{ x } 100\%$

$$= \frac{41.732,28 \times 0,05}{0,01 \times 19.1583,26} \text{ x } 100\%$$

$$= 100\%$$

5. Tingkat Ekstraksi Magnesium pada kondisi pelindian 120 menit, 70°C, 1 M (C_i= 1.723,77 mg/L) (Setelah Kalsinasi)

Tingkat Ekstraksi Mg (%) $= \frac{C_i \times V}{m \times W_i} \text{ x } 100\%$

$$= \frac{1.723,77 \times 0,05}{0,01 \times 19.1583,26} \text{ x } 100\%$$

$$= 4,5\%$$

6. Tingkat Ekstraksi Magnesium pada kondisi pelindian 120 menit, 70°C, 2 M (C_i= 19.929,77 mg/L) (Setelah Kalsinasi)

Tingkat Ekstraksi Mg (%) $= \frac{C_i \times V}{m \times W_i} \text{ x } 100\%$

$$= \frac{19.929,77 \times 0,05}{0,01 \times 19.1583,26} \text{ x } 100\%$$

$$= 52,01\%$$

7. Tingkat Ekstraksi Magnesium pada kondisi pelindian 120 menit, 70°C, 3 M (C_i= 30.825,71 mg/L) (Setelah Kalsinasi)

Tingkat Ekstraksi Mg (%) $= \frac{C_i \times V}{m \times W_i} \text{ x } 100\%$

$$= \frac{30.825,71 \times 0,05}{0,01 \times 19.1583,26} \text{ x } 100\%$$

$$= 80,45\%$$

gkat Ekstraksi Magnesium pada kondisi pelindian 120 menit, 70°C, 4 M
= 25.356,46 mg/L) (Setelah Kalsinasi)

Tingkat Ekstraksi Mg (%) $= \frac{C_i \times V}{m \times W_i}$ x 100%

$= \frac{25.356,46 \times 0,05}{0,01 \times 19.1583,26}$ x 100%

$= 66,18\%$

LAMPIRAN 4
HASIL ANALISIS *X-RAY DIFFRACTION* (XRD)

HASIL ANALISIS *X-RAY DIFFRACTION* (XRD) SAMPEL AWAL

Match! Phase Analysis Report

Sample: DLM-Amalia

Sample D

File name	DLM-Amalia.txt
File path	D:/OPPI/XRD AWAL/DLM-Amalia
Data colle	Jun 1, 2024 20:32:39
Data rang	5.000° - 70.000°
Number o	3251
Step size	0.020
Rietveld refinement converged	No
Alpha2 subtracted	No
Background subtr.	No
Data smoothed	Yes
Radiation	X-rays
Wavelength	1.541874 Å

Matched Phases

Index	*Amount (%)*	*Name*	*Formula sum*
A	85.4	Dolomite	C2 Ca Mg O6
B	14.6	Calcite	C Ca O3
	13.6	*Unidentified peak area*	

A: Dolomite (85.4 %)

Formula sum	C2 Ca Mg O6
Entry number	96-900-1007
Figure-of-Merit (FoM)	0.866905
Total number of peaks	106
Peaks in range	48
Peaks matched	32
Intensity scale factor	0.26
Space group	R -3
Crystal system	trigonal (hexagonal axes)
Unit cell	a= 4.8162 Å c= 16.1320 Å
I/Ic	2.73
Calc. density	2.834 g/cm³
Reference	Reeder R. J., Markgraf S. A., "High-temperature crystal chemistry of dolomite Sample: Anisotropic refinement, Temperature = 400 deg C", American Mineralogist **71**, 795-804 (1986)

B: Calcite (14.6 %)

Formula sum	C Ca O3
Entry number	96-900-9669
Figure-of-Merit (FoM)	0.747990
Total number of peaks	76
Peaks in range	36
Peaks matched	22
Intensity scale factor	0.06
Space group	R -3 c
Crystal system	trigonal (hexagonal axes)
Unit cell	a= 4.9920 Å c= 17.0690 Å
I/Ic	3.58
Calc. density	2.705 g/cm³
Reference	Sitepu H., O?Connor B H, Li D., "Comparative evaluation of the March and generalized spherical harmonic preferred orientation models using X-ray diffraction data for molybdite and calcite powders Note: GSH model Locality: synthetic", Journal of Applied Crystallography **38**, 158-167 (2005)

Candidates

Name	*Formula*	*Entry No.*	*FoM*
Tungsten	W	96-900-6510	0.6231
Tungsten	W	96-900-6514	0.6226
Tungsten	W	96-900-6509	0.6182
Iron	Fe	96-900-0658	0.6175
Iron	Fe	96-900-6589	0.6175
Iron	Fe	96-900-6588	0.6172
Iron-alpha	Fe	96-900-8537	0.6172
	Fe	96-411-3937	0.6170
Iron	Fe	96-900-6596	0.6170
Cobalt iron arsenide (1.9/0.1/1) - $-beta	As Co1.88 Fe0.1	96-100-8517	0.6151
hexagonal boron nitride	B N	96-201-6171	0.6117
Periclase	Mg O	96-901-3272	0.6115
Periclase	Mg O	96-901-3239	0.6109
Tungsten	W	96-900-6513	0.6088
	Fe	96-411-3932	0.6047
Tungsten	W	96-900-6508	0.6038
Periclase	Mg O	96-901-3245	0.6015
Silicon oxide (Quartz low)	O2 Si	96-101-1160	0.5588
Quartz	O2 Si	96-901-2601	0.5584
Quartz	O2 Si	96-900-9667	0.5565
Silicon oxide $-alpha (Quartz low)	O2 Si	96-101-1173	0.5524
Silicon oxide - $-alpha (Quartz low)	O2 Si	96-101-1177	0.5524
Quartz	O2 Si	96-901-3322	0.5513
Silicon oxide (Quartz)	O2 Si	96-500-0036	0.5511
Silicon oxide $-alpha (Quartz low)	O2 Si	96-101-1098	0.5238
Calcite	C Ca O3	96-900-7688	0.3897
Calcite	C Ca O3	96-901-6023	0.3894
Calcite	C Ca O3	96-901-5391	0.3893
Calcite	C Ca O3	96-900-0096	0.3892
Calcite	C Ca O3	96-900-0966	0.3883
Calcite	C Ca O3	96-900-7690	0.3877
Calcite	C Ca O3	96-901-6707	0.3851
Calcite	C Ca O3	96-900-9669	0.3780
Calcite	C Ca O3	96-900-9668	0.3775
Calcite	C Ca O3	96-900-0967	0.3679
Calcite	C Ca0.871 Mg0.129 O3	96-900-1299	0.3632
Calcium carbonate (Calcite)	Ca C O3	96-101-0929	0.3536
Calcite	C Ca O3	96-901-6706	0.3496
Calcite	C Ca0.936 Mg0.064 O3	96-900-1298	0.3455
Calcite	C Ca O3	96-901-4892	0.3439
Calcium carbonate (Calcite)	Ca C O3	96-101-0963	0.3436
Calcite	C Ca O3	96-901-6180	0.3391
barytocalcite	C2 Ba Ca O6	96-591-0096	0.3380
Calcite	C Ca O3	96-900-0968	0.3369
Magnesium calcite	C Ca0.94 Mg0.06 O3	96-721-4218	0.3349
Calcite	C Ca O3	96-901-4878	0.3346
Magnesium Calcium Carbonate (.1/.9/1) (Calcite, magnesian)	C Ca0.9 Mg0.1 O3	96-721-4219	0.3300
Calcite	C Ca0.9 Mg0.1 O3	96-900-0575	0.3286
Quartz	O2 Si	96-900-5019	0.3256
Calcite	C Ca O3	96-901-4416	0.3243
Calcite	C Ca O3	96-901-4773	0.3230
Calcite	C Ca O3	96-901-5836	0.3229

and 67 others...

Search-Match

Settings

Reference database used	COD-Inorg REV140301 2015.07.06
Automatic zeropoint adaptation	Yes
Minimum figure-of-merit (FoM)	0.60
2theta window for peak corr.	0.28 deg.
Minimum rel. int. for peak corr.	1
Parameter/influence 2theta	0.50
Parameter/influence intensities	0.50
Parameter multiple/single phase(s)	0.50

Criteria for entries added by user

Reference:

Entry number: 96-100-1742;96-100-1744;96-101-0918;96-101-0929;96-101-0963;96-591-0096;96-721-4218;96-721-4219;96-900-0096;96-900-0575;96-900-0966;96-900-0967;96-900-0968;96-900-0969;96-900-0970;96-900-0971;96-900-1298;96-900-1299;96-900-7287;96-900-7688;96-900-7690;96-900-9668;96-900-9669;96-900-9866;96-901-3466;96-901-4217;96-901-4345;96-901-4393;96-901-4416;96-901-4525;96-901-4612;96-901-4745;96-901-4773;96-901-4878;96-901-4892;96-901-5067;96-901-5074;96-901-5391;96-901-5461;96-901-5482;96-901-5488;96-901-5692;96-901-5762;96-901-5836;96-901-6021;96-901-6023;96-901-6180;96-901-6201;96-901-6465;96-901-6706;96-901-6707;96-101-1098;96-101-1160;96-101-1173;96-101-1177;96-101-1201;96-110-0020;96-500-0036;96-900-0776;96-900-0777;96-900-0778;96-900-0779;96-900-0780;96-900-0781;96-900-5018;96-900-5019;96-900-5020;96-900-5021;96-900-5022;96-900-5023;96-900-5024;96-900-5025;96-900-5026;96-900-5027;96-900-5028;96-900-5029;96-900-5030;96-900-5031;96-900-5032;96-900-5033;96-900-

5034;96-900-7379;96-900-8093;96-900-8094;96-900-9667;96-901-0145;96-901-0146;96-901-0147;96-901-1494;96-901-1495;96-901-1496;96-901-1497;96-901-2601;96-901-2602;96-901-2603;96-901-2604;96-901-2605;96-901-2606;96-901-3322;96-901-5023

Peak List

No.	2t[illegible]	[illegible]	I/I0	FWHM	Matched
1	[illegible]	[illegible]	6.33	0.2930	B
2	[illegible]	[illegible]	20.43	0.3077	A
3	[illegible]	[illegible]	5.05	0.2775	
4	[illegible]	[illegible]	81.28	0.3600	B
5	[illegible]	[illegible]	388.67	0.2996	A
6	[illegible]	[illegible]	16.61	0.3779	A
7	[illegible]	[illegible]	11.78	0.3200	A
8	36.06	2.4908	13.42	0.3600	B
9	37.24	2.4145	34.31	0.2704	A
10	39.52	2.2803	18.71	0.3445	B
11	40.96	2.2034	90.09	0.3012	A
12	43.28	2.0905	14.87	0.2800	B
13	43.66	2.0732	10.07	0.2800	A
14	44.74	2.0257	55.27	0.3011	A
15	47.62	1.9097	17.54	0.4000	B
16	48.64	1.8720	40.11	0.6000	B
17	49.04	1.8576	29.56	0.4800	A
18	50.10	1.8208	149.84	1.2705	A
19	50.78	1.7980	50.83	0.3304	A
20	57.52	1.6023	6.92	0.3145	B
21	58.66	1.5739	12.15	0.3600	A
22	59.58	1.5517	27.07	0.4124	A
23	63.12	1.4730	23.64	0.5200	A,B
24	64.72	1.4404	29.41	1.3060	A,B
25	65.76	1.4201	3.95	0.2332	A,B
26	67.12	1.3946	20.31	0.4112	

Rietveld Refinement using FullProf

Calculation was not run or did not converge.

Integrated Profile Areas

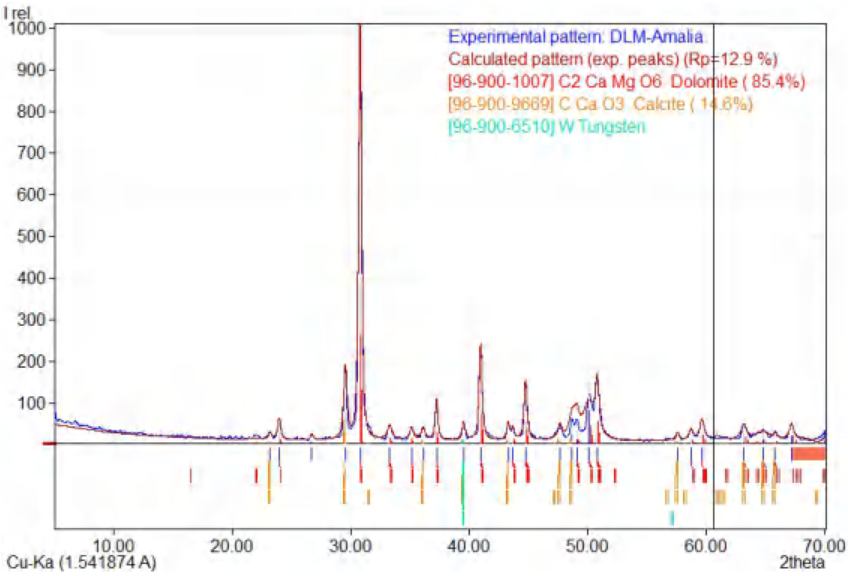
Based on calculated profile

Profile area	*Counts*	*Amount*
Overall diffraction profile	115750	100.00%
Background radiation	52987	45.78%
Diffraction peaks	62763	54.22%
Peak area belonging to selected phases	55176	47.67%
Peak area of phase A (Dolomite)	*45165*	*39.02%*
Peak area of phase B (Calcite)	*10011*	*8.65%*
Unidentified peak area	15791	13.64%

Peak Residuals

Peak data	*Counts*	*Amount*
Overall peak intensity	1282	100.00%
Peak intensity belonging to selected phases	1083	84.46%
Unidentified peak intensity	199	15.54%

Diffraction Pattern Graphics



Match! Phase Analysis Report

Sample: AR-DOLOMIT-AK (5-70)

Sample D	
File name	AR-DOLOMIT-AK.RAW
File path	D:/OPPI/Semester 7/referensi Ta/laporan/referensi/AR-DOLOMIT-AK
Data colle	Jul 4, 2024 22:50:26
Data rang	5.000° - 70.000°
Number o	3251
Step size	0.020
Rietveld refinement converged	No
Alpha2 subtracted	No
Background subtr.	No
Data smoothed	Yes
Radiation	X-rays
Wavelength	1.540600 Å

Matched Phases

Index	*Amount (%)*	*Name*	*Formula sum*
A	32.7	Calcium oxide	Ca O
B	25.4	Brucite (deuterated)	D1.998 Mg O2
C	25.3	Periclase	Mg O
D	16.5	Calcium hydroxide Portlandite	Ca H2 O2
	11.2	*Unidentified peak area*	

A: Calcium oxide (32.7 %)

Formula sum	Ca O
Entry number	96-720-0687
Figure-of-Merit (FoM)	0.906520
Total number of peaks	13
Peaks in range	5
Peaks matched	5
Intensity scale factor	0.32
Space group	F m -3 m
Crystal system	cubic
Unit cell	a= 4.8107 Å
I/Ic	5.16
Calc. density	3.345 g/cm³
Reference	Verbraeken Maarten C., Suard Emmanuelle, Irvine John T. S., "Structural and electrical properties of calcium and strontium hydrides", Journal of Materials Chemistry **19(18)**, 2766 (2009)

B: Brucite (deuterated) (25.4 %)

Formula sum	D1.998 Mg O2
Entry number	96-900-1587
Figure-of-Merit (FoM)	0.249552
Total number of peaks	18
Peaks in range	8
Peaks matched	2
Intensity scale factor	0.12
Space group	P -3 m 1
Crystal system	trigonal (hexagonal axes)
Unit cell	a= 3.1382 Å c= 4.7130 Å
I/Ic	2.48
Calc. density	2.491 g/cm³
Reference	Parise J. B., Leinenweber K., Weidner D. J., Tan K., Von Dreele R. B., "Pressure-induced H bonding: Neutron diffraction study of brucite, Mg(OD)2, to 9.3 GPa P = 0.4 GPa", American Mineralogist **79**, 193-196 (1994)

C: Periclase (25.3 %)

Formula sum	Mg O
Entry number	96-900-6791
Figure-of-Merit (FoM)	0.828755
Total number of peaks	10
Peaks in range	3
Peaks matched	2
Intensity scale factor	0.16
Space group	F m -3 m
Crystal system	cubic
Unit cell	a= 4.2081 Å
I/Ic	3.29
Calc. density	3.592 g/cm³
Reference	Zhang J., "Effect of pressure on the thermal expansion of MgO up to 8.2 GPa Sample: Run1 at T = 673 K, P = 2.66 GPa", Physics and Chemistry of Minerals **27**, 145-148 (2000)

D: Calcium hydroxide Portlandite (16.5 %)

Formula sum	Ca H2 O2
Entry number	96-100-1770
Figure-of-Merit (FoM)	0.789147
Total number of peaks	23
Peaks in range	12
Peaks matched	7
Intensity scale factor	0.12
Space group	P -3 m 1
Crystal system	trigonal (hexagonal axes)
Unit cell	a= 3.5890 Å c= 4.9110 Å
I/Ic	3.84
Meas. density	2.240 g/cm³
Calc. density	2.245 g/cm³
Reference	Desgranges L, Grebille D, Calvarin g, Chevrier G, Floquet N, Niepce J-C, "Hydrogen thermal motion in calcium hydroxide: Ca (O H)2", Acta Crystallographica B (39,1983-) **49**, 812-817 (1993)

Candidates

Name	*Formula*	*Entry No.*	*FoM*
Portlandite	Ca H2 O2	96-900-0113	0.6522
Calcium hydroxide (Portlandite)	Ca H2 O2	96-100-1770	0.6001
Calcium hydroxide (Portlandite)	Ca H2 O2	96-100-1769	0.5997
Calcium hydroxide (Portlandite)	Ca H2 O2	96-100-1789	0.5996
Calcium hydroxide (Portlandite)	Ca H2 O2	96-100-1788	0.5990
Ca(OH)2	Ca H2 O2	96-702-0139	0.5886
Portlandite	Ca H2 O2	96-900-6833	0.5869
Portlandite	Ca H2 O2	96-900-9099	0.5680
Calcium hydroxide	Ca H2 O2	96-100-0046	0.5663
Calcium hydroxide (Portlandite)	Ca H2 O2	96-100-8781	0.5663
Calcium hydroxide (Portlandite)	Ca H2 O2	96-100-8782	0.5626
Portlandite	Ca H2 O2	96-900-0114	0.5560
Calcite	C Ca O3	96-900-7287	0.4687
Quartz	O2 Si	96-901-2606	0.4494
Barium titanium magnesium oxide (1.2/6.8/1.2/16) (Hollandite)	Ba1.2 Mg1.2 O16 Ti6.8	96-100-8949	0.4098
Barytocalcite	C2 Ba Ca O6	96-900-9866	0.4068
Quartz	O2 Si	96-900-0780	0.3966
	Ca H2 O2	96-210-1034	0.3702
Barytocalcite	C2 Ba Ca O6	96-901-3466	0.3243
Barium titanium magnesium oxide (1.2/6.8/1.2/16) (Hollandite (Ti, Mg))	Ba1.2 Mg1.2 O16 Ti6.8	96-100-8814	0.3227
Barium titanium magnesium oxide (1.2/6.8/1.2/16) (Hollandite)	Ba1.2 Mg1.2 O16 Ti6.8	96-100-8952	0.3227
Dolomite	C Ca0.5 Mg0.5 O3	96-900-3513	0.3084
Dolomite	C2 Ca1.13 Mg0.87 O6	96-900-4932	0.2992
Calcium nitrate tetrahydrate (Nitrocalcite)	Ca H8 N2 O10	96-100-1744	0.2977
Nitrocalcite	Ca N2 O10	96-901-5488	0.2977
Calcium barium carbonate (Barytocalcite)	Ba Ca O6	96-101-0918	0.2832
Dolomite	C2 Ca Mg O6	96-900-1007	0.2795
Dolomite	C2 Ca Mg O6	96-900-1011	0.2795
Dolomite	C2 Ca1.14 Mg0.86 O6	96-900-4934	0.2794
Dolomite	C2 Ca1.17 Mg0.83 O6	96-900-4930	0.2768
Dolomite	C2 Ca Mg O6	96-900-0084	0.2702
Dolomite	C Ca0.5 Mg0.5 O3	96-900-3528	0.2490
Magnesium hydroxide (Brucite)	H2 Mg O2	96-100-0055	0.2471
Quartz	O2 Si	96-900-0779	0.2441
Dolomite	C2 Ca Fe0.33 Mg0.67 O6	96-900-4935	0.2436
Dolomite	C Ca0.5 Mg0.5 O3	96-900-3512	0.2434
Dolomite	C Ca0.5 Mg0.5 O3	96-900-3514	0.2387
Dolomite	C2 Ca Mg O6	96-900-3509	0.2353
Dolomite	C Ca0.5 Mg0.5 O3	96-900-3529	0.2345
Calcium Magnesium Carbonate (Dolomite)	C2 Ca Mg O6	96-151-7798	0.2338
Dolomite	C2 Ca Mg O6	96-900-1005	0.2323
Dolomite	C2 Ca Mg O6	96-900-1009	0.2323

Dolomite	C Ca0.5 Mg0.5 O3	96-900-3526	0.2304
Dolomite	C Ca0.5 Mg0.5 O3	96-900-3530	0.2301
Dolomite	C Ca0.5 Mg0.5 O3	96-900-3527	0.2284
Quartz	O2 Si	96-900-5026	0.2259
Quartz	O2 Si	96-900-5027	0.2259
Quartz	O2 Si	96-900-5028	0.2259
Quartz	O2 Si	96-900-5029	0.2259
Quartz	O2 Si	96-900-5030	0.2259
Quartz	O2 Si	96-900-5031	0.2259
Quartz	O2 Si	96-900-5033	0.2259

and 150 o

Search-Match

Settings

Reference database used	COD-Inorg REV140301 2015.07.06
Automatic zeropoint adaptation	Yes
Minimum figure-of-merit (FoM)	0.60
2theta window for peak corr.	0.28 deg.
Minimum rel. int. for peak corr.	1
Parameter/influence 2theta	0.50
Parameter/influence intensities	0.50
Parameter multiple/single phase(s)	0.50

Criteria for entries added by user

Reference:

Entry number:

96-100-1742;96-100-1744;96-101-0918;96-101-0929;96-101-0963;96-591-0096;96-721-4218;96-721-4219;96-900-0096;96-900-0575;96-900-0966;96-900-0967;96-900-0968;96-900-0969;96-900-0970;96-900-0971;96-900-1298;96-900-1299;96-900-7287;96-900-7688;96-900-7690;96-900-9668;96-900-9669;96-900-9866;96-901-3466;96-901-4217;96-901-4345;96-901-4393;96-901-4416;96-901-4525;96-901-4612;96-901-4745;96-901-4773;96-901-4878;96-901-4892;96-901-5067;96-901-5074;96-901-5391;96-901-5461;96-901-5482;96-901-5488;96-901-5692;96-901-5762;96-901-5836;96-901-6021;96-901-6023;96-901-6180;96-901-6201;96-901-6465;96-901-6706;96-901-6707;96-120-0015;96-151-7796;96-151-7797;96-151-7798;96-210-5964;96-500-0117;96-900-0084;96-900-0106;96-900-0574;96-900-0886;96-900-0887;96-900-0888;96-900-1005;96-900-1006;96-900-1007;96-900-1008;96-900-1009;96-900-1010;96-900-1011;96-900-1012;96-900-1044;96-900-1246;96-900-1416;96-900-1417;96-900-1418;96-900-1419;96-900-1420;96-900-3509;96-900-3510;96-900-3511;96-900-3512;96-900-3513;96-900-3514;96-900-3515;96-900-3516;96-900-3517;96-900-3518;96-900-3519;96-900-3520;96-900-3521;96-900-3522;96-900-3523;96-900-3524;96-900-3525;96-900-3526;96-900-3527;96-900-3528;96-900-3529;96-900-3530;96-900-3531;96-900-4929;96-900-4930;96-900-4931;96-900-4932;96-900-4933;96-900-4934;96-900-4935;96-900-9593;96-100-0055;96-900-1587;96-900-1588;96-900-1589;96-900-1590;96-900-2349;96-900-2350;96-900-2351;96-900-2352;96-900-2353;96-900-2354;96-900-2355;96-900-3876;96-900-3877;96-900-3878;96-900-6331;96-900-6332;96-900-6333;96-900-6334;96-101-1098;96-101-1160;96-101-1173;96-101-1177;96-101-1201;96-110-0020;96-500-0036;96-900-0776;96-900-0777;96-900-0778;96-900-0779;96-900-0780;96-900-0781;96-900-5018;96-900-5019;96-900-5020;96-900-5021;96-900-5022;96-900-5023;96-900-5024;96-900-5025;96-900-5026;96-900-5027;96-900-5028;96-900-5029;96-900-5030;96-900-5031;96-900-5032;96-900-5033;96-900-5034;96-900-7379;96-900-8093;96-900-8094;96-900-9667;96-901-0145;96-901-0146;96-901-0147;96-901-1494;96-901-1495;96-901-1496;96-901-1497;96-901-2601;96-901-2602;96-901-2603;96-901-2604;96-901-2605;96-901-2606;96-901-3322;96-901-5023;96-100-0046;96-100-1769;96-100-1770;96-100-1788;96-100-1789;96-100-8781;96-100-8782;96-210-1034;96-702-0139;96-900-0113;96-900-0114;96-900-6833;96-900-6834;96-900-6835;96-900-6836;96-900-6837;96-900-6838;96-900-9099;96-100-0054;96-100-8814;96-100-8949;96-100-8952;96-101-1117;96-101-1118;96-101-1119;96-101-1174;96-101-1194;96-101-1327;96-500-0226;96-100-8061

Peak List

No.	2theta [°]	d [Å]	I/I0	FWHM	Matched
1	18.02	4.9187	76.28	0.7812	D
2	28.76	3.1016	23.25	0.5235	D
3	32.26	2.7727	125.09	0.2784	A
4	33.18	2.6979	0.56	0.3640	B
5	34.16	2.6227	135.34	0.9097	D
6	37.40	2.4026	314.50	0.2525	A
7	42.96	2.1036	156.83	0.2759	C
8	46.94	1.9341	7.24	0.4547	D
9	47.68	1.9058	71.07	1.9305	
10	50.84	1.7945	36.37	0.6582	D
11	53.92	1.6991	184.04	0.2978	A
12	62.36	1.4878	95.36	0.3328	B,C
13	64.20	1.4496	58.57	0.3445	A,D
14	67.44	1.3876	67.65	0.4162	A

Rietveld Refinement using FullProf

Calculation was not run or did not converge.

Integrated Profile Areas

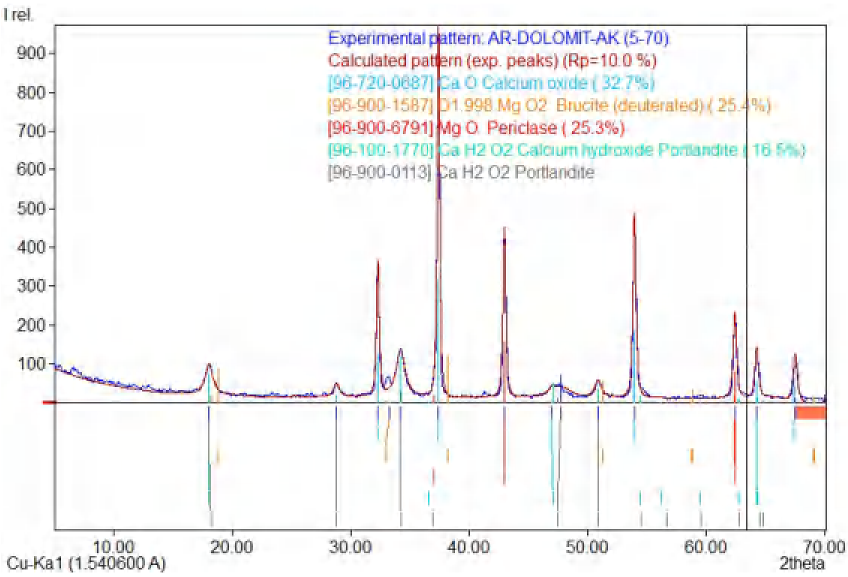
Based on calculated profile

Profile area	*Counts*	*Amount*
Overall diffraction profile	94031	100.00%
Background radiation	44950	47.80%
Diffraction peaks	49081	52.20%
Peak area belonging to selected phases	43336	46.09%
Peak area of phase A (Calcium oxide)	*21367*	*22.72%*
Peak area of phase B (Brucite (deuterated))	*3046*	*3.24%*
Peak area of phase C (Periclase)	*8079*	*8.59%*
Peak area of phase D (Calcium hydroxide Portlandite)	*10844*	*11.53%*
Unidentified peak area	10559	11.23%

Peak Residuals

Peak data	*Counts*	*Amount*
Overall peak intensity	919	100.00%
Peak intensity belonging to selected phases	843	91.68%
Unidentified peak intensity	76	8.32%

Diffraction Pattern Graphics



HASIL ANALISIS *X-RAY DIFFRACTION* (XRD) SAMPEL RESIDU

Match! Phase Analysis Report

Sample: AMALIA-2-MOL-2-JAM

Sample D

File name	AMALIA-2-MOL-2-JAM.txt
File path	D:/OPPI/Semester 7/referensi Ta/laporan/referensi/AMALIA-2-MOL-2-JAM
Data colle	Jun 8, 2024 22:22:28
Data rang	5.000° - 70.000°
Number o	3251
Step size	0.020
Rietveld refinement converged	No
Alpha2 subtracted	No
Background subtr.	No
Data smoothed	Yes
Radiation	X-rays
Wavelength	1.541874 Å

Matched Phases

Index	*Amount (%)*	*Name*	*Formula sum*
A	100.0	Magnesium calcite	C Ca0.94 Mg0.06 O3
	15.5	*Unidentified peak area*	

A: Magnesium calcite (100.0 %)

Formula sum	C Ca0.94 Mg0.06 O3
Entry number	96-721-4218
Figure-of-Merit (FoM)	0.863146
Total number of peaks	86
Peaks in range	33
Peaks matched	24
Intensity scale factor	0.30
Space group	R -3 c
Crystal system	trigonal (hexagonal axes)
Unit cell	a= 4.9630 Å c= 16.9570 Å
I/Ic	3.42
Calc. density	2.729 g/cm³
Reference	Falini G., Fermani S., Gazzano M., Ripamonti A., "Structure and morphology of synthetic magnesium calcite", Journal of Materials Chemistry **8**, 1061-1065 (1998)

Candidates

Name	*Formula*	*Entry No.*	*FoM*
Calcite	C Ca O3	96-900-7690	0.5390
Calcite	C Ca O3	96-900-0966	0.5362
Calcite	C Ca O3	96-900-9668	0.5344
Calcite	C Ca O3	96-901-6023	0.5343
Calcite	C Ca O3	96-901-5391	0.5342
Calcite	C Ca O3	96-900-0967	0.5341
Magnesium dizinc cerium	Ce Mg Zn2	96-221-4424	0.5313
Calcite	C Ca O3	96-900-0096	0.5309
Calcite	C Ca O3	96-901-6707	0.5295
Calcite	C Ca O3	96-900-7688	0.5288
Calcite	C Ca O3	96-900-9669	0.5271
Scandium magnesium gallide	Ga2 Mg Sc2	96-201-6996	0.5254
Magnesium calcite	C Ca0.94 Mg0.06 O3	96-721-4218	0.5248
Calcite	C Ca0.936 Mg0.064 O3	96-900-1298	0.5225
Dicalcium magnesium disilicate	Ca2 Mg O7 Si2	96-101-0216	0.5197
Calcite	C Ca O3	96-901-4217	0.5103
Calcite	C Ca O3	96-901-5074	0.5094
Calcite	C Ca O3	96-901-5461	0.5079
Calcium trimagnesium carbonate (Huntite)	C4 Ca Mg3 O12	96-100-0053	0.5077
Calcium carbonate (Calcite)	Ca C O3	96-101-0963	0.5074
Magnesium	Mg	96-901-3061	0.5073
Calcite	C Ca O3	96-901-6021	0.5033
Calcite	C Ca O3	96-901-4525	0.5031
Calcite	C Ca O3	96-901-5762	0.5030
Magnesium	Mg	96-901-3062	0.5026
Calcite	C Ca O3	96-901-4345	0.5022
Calcite	C Ca O3	96-900-0968	0.5019
Calcite	C Ca O3	96-901-5836	0.5017
Magnesium	Mg	96-901-3063	0.5013
Calcite	C Ca O3	96-901-6706	0.5012
Calcite	C Ca O3	96-901-4892	0.5005
Calcite	C Ca O3	96-901-6465	0.4997
Calcite	C Ca O3	96-901-5482	0.4994
Calcite	C Ca O3	96-901-5067	0.4988
Trimagnesium Calcium Carbonate (Huntite)	C4 Ca Mg3 O12	96-231-0129	0.4986
Calcite	C Ca O3	96-901-4612	0.4982
Calcite	C Ca0.9 Mg0.1 O3	96-900-0575	0.4978
Calcite	C Ca O3	96-901-4745	0.4965
Dilead magnesium tungstate - II	Mg O6 Pb2 W	96-100-1662	0.4962
Calcite	C Ca O3	96-901-4773	0.4960
Magnesium Calcium Carbonate (.1/.9/1) (Calcite, magnesian)	C Ca0.9 Mg0.1 O3	96-721-4219	0.4958
Calcite	C Ca O3	96-901-5692	0.4953
Calcite	C Ca O3	96-901-6201	0.4952
Calcite	C Ca O3	96-901-4416	0.4942
Calcite	C Ca O3	96-901-6180	0.4941
Calcite	C Ca O3	96-901-4878	0.4939
Calcite	C Ca O3	96-900-0969	0.4936
Calcium carbonate (Calcite)	Ca C O3	96-101-0929	0.4935
Calcite	C Ca O3	96-900-0970	0.4914
Dilead magnesium tungstate - II	Mg O6 Pb2 W	96-100-1663	0.4906
Dolomite	C2 Ca Mg O6	96-900-1418	0.4895
Calcite	C Ca O3	96-900-0971	0.4892

and 150 others...

Search-Match

Settings

Reference database used	COD-Inorg REV140301 2015.07.06
Automatic zeropoint adaptation	Yes
Minimum figure-of-merit (FoM)	0.60
2theta window for peak corr.	0.28 deg.
Minimum rel. int. for peak corr.	1
Parameter/influence 2theta	0.50
Parameter/influence intensities	0.50
Parameter multiple/single phase(s)	0.50

Criteria for entries added by user

Reference:

Entry number:

96-120-0015;96-151-7796;96-151-7797;96-151-7798;96-210-5964;96-500-0117;96-900-0084;96-900-0106;96-900-0574;96-900-0886;96-900-0887;96-900-0888;96-900-1005;96-900-1006;96-900-1007;96-900-1008;96-900-1009;96-900-1010;96-900-1011;96-900-1012;96-900-1044;96-900-1246;96-900-1416;96-900-1417;96-900-1418;96-900-1419;96-900-1420;96-900-3509;96-900-3510;96-900-3511;96-900-3512;96-900-3513;96-900-3514;96-900-3515;96-900-3516;96-900-3517;96-900-3518;96-900-3519;96-900-3520;96-900-3521;96-900-3522;96-900-3523;96-900-3524;96-900-3525;96-900-3526;96-900-3527;96-900-3528;96-900-3529;96-900-3530;96-900-3531;96-900-4929;96-900-4930;96-900-4931;96-900-4932;96-900-4933;96-900-4934;96-900-4935;96-900-9593;96-100-1742;96-100-1744;96-101-0918;96-101-0929;96-101-0963;96-591-0096;96-721-4218;96-721-4219;96-900-0096;96-900-0575;96-900-0966;96-900-0967;96-900-0968;96-900-0969;96-900-0970;96-900-0971;96-900-1298;96-900-1299;96-900-7287;96-900-7688;96-900-7690;96-900-9668;96-900-9669;96-900-9866;96-901-3466;96-901-4217;96-901-4345;96-901-4393;96-901-4416;96-901-4525;96-901-4612;96-901-4745;96-901-4773;96-901-4878;96-901-4892;96-901-5067;96-901-5074;96-901-5391;96-901-5461;96-901-5482;96-901-5488;96-901-5692;96-901-5762;96-901-5836;96-901-6021;96-901-6023;96-901-6180;96-901-6201;96-901-6465;96-901-6706;96-901-6707;96-100-0028;96-100-0036;96-100-0037;96-100-0039;96-100-0048;96-100-0053;96-100-0054;96-100-0055;96-100-0505;96-100-1032;96-100-1130;96-100-1133;96-100-1135;96-100-1137;96-100-1138;96-100-1139;96-100-1140;96-100-1141;96-100-1142;96-100-1143;96-100-1290;96-100-1331;96-100-1361;96-100-1441;96-100-1463;96-100-1466;96-100-1661;96-100-1662;96-100-1663;96-100-1722;96-100-1743;96-100-1775;96-100-1819;96-100-1824;96-100-5056;96-100-5057;96-100-6064;96-100-7081;96-100-7258;96-100-7263;96-100-8084;96-100-8087;96-100-8171;96-100-8172;96-100-8173;96-100-8270;96-100-8283;96-100-8286;96-100-8287;96-100-8288;96-100-8289;96-100-8290;96-100-8652;96-100-8765;96-100-8810;96-100-8811;96-100-8812;96-100-8814;96-100-8831;96-100-8844;96-100-8915;96-100-8949;96-100-8952;96-101-0070;96-101-0108;96-101-0109;96-101-0116;96-101-0125;96-101-0130;96-101-0216;96-101-0258;96-101-0366;96-101-0369;96-101-0413;96-101-0485;96-101-0498;96-101-0643;96-101-0912;96-101-0934;96-101-0936;96-101-0961;96-101-1010;96-101-1016;96-101-1019;96-101-1022;96-101-1023;96-101-1048;96-101-1058;96-101-1094;96-101-1117;96-101-1118;96-101-1119;96-101-1147;96-101-1153;96-101-1159;96-101-1174;96-101-1194;96-101-1203;96-101-1222;96-101-1223;96-101-1239;96-101-1242;96-101-1246;96-101-1250;96-101-1277;96-101-1278;96-101-1285;96-101-1327;96-101-1348;96-101-1356;96-101-1361;96-101-1382;96-110-0007;96-110-0017;96-110-0018;96-110-0019;96-110-0064;96-110-0070;96-110-0071;96-110-0072;96-110-0073;96-110-0074;96-110-0075;96-110-0076;96-110-0077;96-110-0078;96-110-0079;96-110-0080;96-110-0081;96-110-0082;96-110-0083;96-110-0084;96-110-0085;96-110-0086;96-110-0087;96-110-0088;96-110-0089;96-110-0090;96-110-0091;96-110-0092;96-110-0093;96-110-0094;96-110-0095;96-110-0096;96-110-0097;96-110-0098;96-110-0099;96-110-0100;96-110-0101;96-110-0102;96-110-0103;96-110-0104;96-110-1025;96-110-1034;96-110-1035;96-120-0005;96-120-0007;96-150-8991;96-150-9013;96-150-9046;96-150-9059;96-150-9098;96-151-3214;96-200-2138;96-200-2200;96-200-2320;96-200-2337;96-200-2338;96-200-2355;96-200-2369;96-200-2389;96-200-2391;96-200-2417;96-200-2418;96-200-2423;96-200-2424;96-200-2432;96-200-2434;96-200-2526;96-200-2551;96-200-2573;96-200-2574;96-200-2586;96-200-2589;96-200-2625;96-200-2638;96-200-2662;96-200-2664;96-200-2674;96-200-2675;96-200-2680;96-200-2711;96-200-2720;96-200-2758;96-200-2784;96-200-2786;96-200-2822;96-200-2865;96-200-2873;96-200-4176;96-200-6190;96-200-6774;96-200-6886;96-200-7367;96-200-8873;96-200-9937;96-201-2072;96-201-2345;96-201-2797;96-201-3037;96-201-3392;96-201-3705;96-201-3924;96-201-3925;96-201-4024;96-201-4291;96-201-4617;96-201-5343;96-201-5725;96-201-5726;96-201-5820;96-201-6697;96-201-6996;96-201-7412;96-201-7472;96-201-7848;96-201-7952;96-201-7953;96-201-7954;96-201-8009;96-201-8118;96-201-8340;96-201-8908;96-201-8909;96-201-9271;96-201-9272;96-201-9273;96-201-9274;96-201-9275;96-201-9276;96-201-9456;96-201-9457;96-210-1856;96-210-

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Peak List

No.	2t	[illegible]	I/I0	FWHM	Matched
1	[illegible]	[illegible]	82.44	0.7760	A
2	[illegible]	[illegible]	422.78	0.3534	A
3	31.56	2.8349	47.32	1.9692	A
4	36.16	2.4841	73.32	0.4263	A
5	39.60	2.2759	94.88	0.4345	A
6	43.38	2.0860	107.83	0.5230	A
7	47.56	1.9119	158.31	0.8000	A
8	48.66	1.8712	88.43	0.4255	A
9	57.70	1.5977	69.56	0.8354	A
10	59.96	1.5428	36.67	0.9200	
11	60.98	1.5194	57.57	0.8781	A
12	62.46	1.4869	22.04	0.8619	
13	63.48	1.4655	12.76	0.6646	A
14	65.08	1.4333	54.07	0.9733	A

Rietveld Refinement using FullProf

Calculation was not run or did not converge.

Integrated Profile Areas

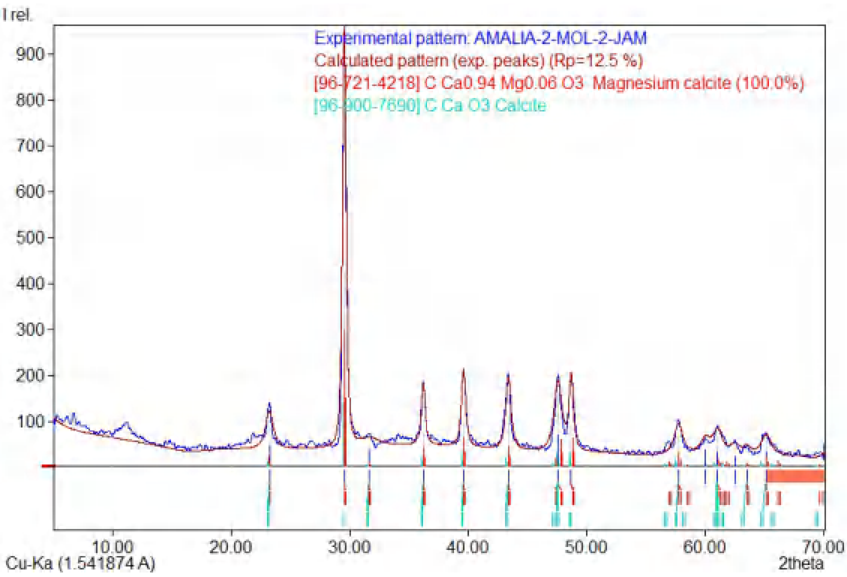
Based on calculated profile

Profile area	*Counts*	*Amount*
Overall diffraction profile	114206	100.00%
Background radiation	71802	62.87%
Diffraction peaks	42404	37.13%
Peak area belonging to selected phases	28265	24.75%
Peak area of phase A (Magnesium calcite)	*28265*	*24.75%*
Unidentified peak area	17692	15.49%

Peak Residuals

Peak data	*Counts*	*Amount*
Overall peak intensity	725	100.00%
Peak intensity belonging to selected phases	524	72.33%
Unidentified peak intensity	201	27.67%

Diffraction Pattern Graphics



Match! Phase Analysis Report

Sample: AMALIA-3-MOL-2-JAM

Sample D

File name	AMALIA-3-MOL-2-JAM.txt
File path	D:/OPPI/Semester 7/referensi Ta/laporan/referensi/AMALIA-3-MOL-2-JAM
Data colle	Jun 8, 2024 22:22:28
Data rang	5.000° - 70.000°
Number o	3251
Step size	0.020
Rietveld refinement converged	No
Alpha2 subtracted	No
Background subtr.	No
Data smoothed	Yes
Radiation	X-rays
Wavelength	1.541874 Å

Matched Phases

Index	*Amount (%)*	*Name*	*Formula sum*
A	100.0	Magnesium chlorate(VII) hexahydrate	Cl2 H12 Mg O14
	27.8	*Unidentified peak area*	

A: Magnesium chlorate(VII) hexahydrate (100.0 %)

Formula sum	Cl2 H12 Mg O14
Entry number	96-101-0116
Figure-of-Merit (FoM)	0.385626
Total number of peaks	656
Peaks in range	272
Peaks matched	36
Intensity scale factor	0.16
Space group	P m n 21 S
Crystal system	orthorhombic
Unit cell	a= 7.7600 Å b= 13.4600 Å c= 5.2600 Å
I/Ic	1.22
Calc. density	1.929 g/cm³
Reference	, "Crystal Structures of Hydrated Compounds. II. Structure Type Mg (Cl O~4~)~2~ (H~2~ O)~6~", Zeitschrift fuer Kristallographie, Kristallgeometrie, Kristallphysik, Kristallchemie (-144,1977) **91**, 480-493 (1935)

Candidates

Name	*Formula*	*Entry No.*	*FoM*
Magnesium oxide (Periclase)	Mg O	96-101-1194	0.6504
Magnesium oxide (Periclase)	Mg O	96-101-1119	0.6493
Magnesium oxide (Periclase)	Mg O	96-101-1118	0.6452
Magnesium oxide (Periclase)	Mg O	96-101-1117	0.6448
Magnesium oxide (Periclase)	Mg O	96-500-0226	0.6448
Magnesium oxide (Periclase)	Mg O	96-100-0054	0.6447
Magnesium oxide (Periclase)	Mg O	96-101-1174	0.6443
Magnesium oxide (Periclase)	Mg O	96-101-1327	0.6443
Potassium [iron(II)/magnesium] iron(III) bis(orthophosphate)	Fe1.91 K Mg0.09 O8 P2	96-223-5287	0.6416
Magnesium chromate - $-beta	Cr Mg O4	96-100-8087	0.6267
Dicalcium sodium dimagnesium trivanadium tridecaoxide	Ca2 Mg2 Na O12 V3	96-201-3705	0.6023
Magnesium Molybdate	Mg Mo O4	96-230-0505	0.5971
Decacalcium pentamagnesium tricopper dodecavanadium oxide	Ca10 Cu3 Mg5 O48 V12	96-200-2865	0.5757
Pentacalcium trimagnesium zinc hexakis(vanadate)	Ca5 Mg3 O24 V6 Zn	96-200-2589	0.5668
Magnesium thiosulfate hexahydrate	H12 Mg O9 S2	96-110-0073	0.5636
Dicalcium sodium dimagnesium arsenate (Berzeliite)	As3 Ca2 Mg2 Na O12	96-101-0912	0.5552
Magnesium thiosulfate hexahydrate	H12 Mg O9 S2	96-110-0075	0.5533
Magnesium thiosulfate hexahydrate	H12 Mg O9 S2	96-110-0080	0.5522
Magnesium thiosulfate hexahydrate	H12 Mg O9 S2	96-110-0079	0.5520
Magnesium iron oxide (1.6/1.6/4)	Fe1.6 Mg1.55 O4	96-100-6064	0.5431
Icosa Cerium nonadeca Magnesium henoctaconta Zinc	Ce20 Mg19 Zn81	96-201-6697	0.5404
Magnesium thiosulfate hexahydrate	H12 Mg O9 S2	96-110-0078	0.5333
Magnesium perchlorate dihydrate	Cl2 H4 Mg O10	96-210-4834	0.5330
Magnesium thiosulfate hexahydrate	H12 Mg O9 S2	96-110-0074	0.5311
Dimagnesium titanium oxide (Qandilite)	Mg2 O4 Ti	96-101-1277	0.5293
Magnesium thiosulfate hexahydrate	H12 Mg O9 S2	96-110-0071	0.5227
Kalium trimagnesium palladium tris(arsenate(V))	As3 K Mg3 O12 Pd	96-200-2680	0.5194
Trimagnesium bis(sulfate(VI)) dihydroxide	H2 Mg3 O10 S2	96-110-0100	0.5168
Silver trimagnesium phosphate bis(hydrogenphosphate)	Ag H2 Mg3 O12 P3	96-222-8708	0.5104
Dialuminium pentamagnesium trisilicate octahydroxide (Clinochlore 2M)	Al2 H8 Mg5 O18 Si3	96-101-1016	0.5078
Neodymium magnesium aluminium oxide (1/1/11/19)	Al11 Mg Nd O19	96-200-2338	0.5055
sodium magnesium decavanadate hydrate	H40 Mg2 Na2 O48 V10	96-201-3924	0.5053
Barium magnesium iron uranium oxide (2/0.5/0.7/0.8/6)	Ba2 Fe0.667 Mg0.5 O6 U0.833	96-100-1135	0.5022
magnesium hydroxide sulfate	H2 Mg3 O10 S2	96-210-1856	0.5002
Sodium magnesium copper trivanadate (1/1.6/.4/1)	Cu0.36 Mg1.64 Na O10 V3	96-200-2664	0.5001
Magnesium diiron(III) oxide (Magnesioferrite)	Fe2 Mg O4	96-101-1242	0.4938
tricerium hemimagnesium germanium heptasulfide	Ce3 Ge Mg0.5 S7	96-221-6156	0.4918
Calcium Magnesium Carbonate (Dolomite)	C2 Ca Mg O6	96-151-7798	0.4902
Cadmium copper magnesium lead vanadium oxide (1/1.5/1.5/0.5/3/12)	Cd Cu1.5 Mg1.5 O12 Pb0.5 V3	96-200-2720	0.4900
magnesium hydrogen phosphate	H4 Mg7 O24 P6	96-223-0980	0.4876
Magnesium Sodium Pyrovanadate	Mg2 Na6 O15 V4	96-201-4024	0.4870
Tetracalcium magnesium tetrairon(III) hexakis-phosphate tetrahydroxide dodecahydrate	Al1.07 Ca3.94 Fe2.93 H28 Mg1.01 O40 P6 Sr0.06	96-223-9375	0.4855
Potassium Magnesium imide-amide	D3 K Mg N2	96-151-3214	0.4852
Sodium dimagnesium trivanadate	Mg2 Na O10 V3	96-221-7730	0.4843
Potassium iron dimagnesium phyllo-alumotrisilicate dihydroxide (Biotite)	Al Fe H2 K Mg2 O12 Si3	96-100-0039	0.4828
magnesium aluminum iron chromite	Al0.41 Cr1.42 Fe0.65 Mg0.4 O4	96-201-4617	0.4827
Zinc magnesium tantalum oxide (.7/.3/2/6)	Mg0.3 O6 Ta2 Zn0.7	96-200-2432	0.4820
Caesium magnesium orthophosphate	Cs Mg O4 P	96-222-2806	0.4815
calcium-magnesium silicide	Ca Mg Si	96-400-0955	0.4814
magnesium sulfate	Mg O4 S	96-230-0130	0.4813
heptasodium tridecamagnesium neodymium dodecakisphosphate	Mg13 Na7 Nd O48 P12	96-223-5282	0.4810
Trimagnesium tetratitanium(III) hexakis(phosphate)	Mg3 O24 P6 Ti4	96-100-1441	0.4807

and 150 others...

Search-Match

Settings

Reference database used	COD-Inorg REV140301 2015.07.06
Automatic zeropoint adaptation	Yes
Minimum figure-of-merit (FoM)	0.60
2theta window for peak corr.	0.28 deg.
Minimum rel. int. for peak corr.	1
Parameter/influence 2theta	0.50
Parameter/influence intensities	0.50
Parameter multiple/single phase(s)	0.50

Criteria for entries added by user

Reference:

Entry number:

96-100-0055;96-900-1587;96-900-1588;96-900-1589;96-900-1590;96-900-2349;96-900-2350;96-900-2351;96-900-2352;96-900-2353;96-900-2354;96-900-2355;96-900-3876;96-900-3877;96-900-3878;96-900-6331;96-
900-6332;96-900-6333;96-900-6334;96-100-0028;96-100-0036;96-100-0037;96-100-0039;96-100-0048;96-100-0053;96-100-0054;96-100-0505;96-100-1032;96-100-1130;96-100-1133;96-100-1135;96-100-1137;96-100-
1138;96-100-1139;96-100-1140;96-100-1141;96-100-1142;96-100-1143;96-100-1290;96-100-1331;96-100-1361;96-100-1441;96-100-1463;96-100-1466;96-100-1661;96-100-1662;96-100-1663;96-100-1722;96-100-
1743;96-100-1775;96-100-1819;96-100-1824;96-100-5056;96-100-5057;96-100-6064;96-100-7081;96-100-7258;96-100-7263;96-100-8084;96-100-8087;96-100-8171;96-100-8172;96-100-8173;96-100-8270;96-100-
8283;96-100-8286;96-100-8287;96-100-8288;96-100-8289;96-100-8290;96-100-8652;96-100-8765;96-100-8810;96-100-8811;96-100-8812;96-100-8814;96-100-8831;96-100-8844;96-100-8915;96-100-8949;96-100-
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0934;96-101-0936;96-101-0961;96-101-1010;96-101-1016;96-101-1019;96-101-1022;96-101-1023;96-101-1048;96-101-1058;96-101-1094;96-101-1117;96-101-1118;96-101-1119;96-101-1147;96-101-1153;96-101-
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1361;96-101-1382;96-110-0007;96-110-0017;96-110-0018;96-110-0019;96-110-0064;96-110-0070;96-110-0071;96-110-0072;96-110-0073;96-110-0074;96-110-0075;96-110-0076;96-110-0077;96-110-0078;96-110-
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9265;96-223-0313;96-223-0980;96-223-3441;96-223-5282;96-223-5287;96-223-5289;96-223-7540;96-223-8070;96-223-8317;96-223-8573;96-223-9375;96-223-9927;96-224-0311;96-224-0440;96-224-0853;96-224-
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Peak List

No.	2theta	d	I/I0	FWHM	Matched
1	[illegible]	[illegible]	39.86	0.1600	A
2	[illegible]	[illegible]	495.97	0.5600	A
3	[illegible]	[illegible]	171.92	0.1600	
4	[illegible]	[illegible]	119.00	0.1600	
5	[illegible]	[illegible]	274.28	1.2400	
6	[illegible]	[illegible]	42.75	0.1600	A
7	35.64	2.5192	237.18	0.9200	A
8	37.50	2.3984	97.79	0.1600	A
9	42.96	2.1054	62.60	0.6800	
10	46.94	1.9357	45.11	0.5537	A
11	47.68	1.9074	15.94	1.7600	A
12	50.84	1.7960	111.47	0.8422	A
13	53.92	1.7005	134.31	1.1357	A
14	62.44	1.4874	286.70	1.8298	A
15	64.20	1.4508	76.18	0.4800	A
16	67.44	1.3887	91.44	0.1600	

Rietveld Refinement using FullProf

Calculation was not run or did not converge.

Integrated Profile Areas

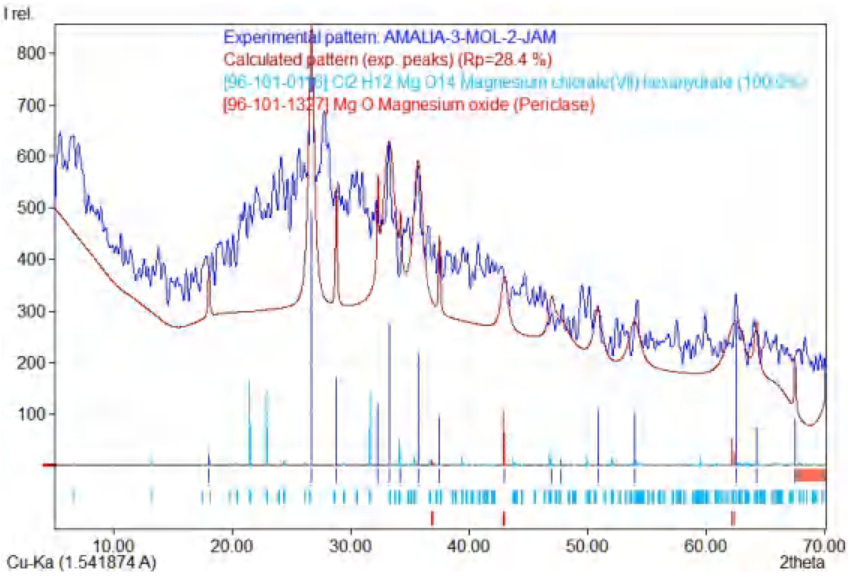
Based on calculated profile

Profile area	*Counts*	*Amount*
Overall diffraction profile	130400	100.00%
Background radiation	89085	68.32%
Diffraction peaks	41315	31.68%
Peak area belonging to selected phases	7331	5.62%
Peak area of phase A (Magnesium chlorate(VII) hexahydrate)	*7331*	*5.62%*
Unidentified peak area	36199	27.76%

Peak Residuals

Peak data	*Counts*	*Amount*
Overall peak intensity	244	100.00%
Peak intensity belonging to selected phases	18	7.32%
Unidentified peak intensity	226	92.68%

Diffraction Pattern Graphics



LAMPIRAN 5
KARTU KONSULTASI

Lampiran B 10

Kartu Konsultasi Tugas Akhir

JUDUL: STUDI EKSTRAKSI MAGNESIUM DARI DOLOMIT DENGAN MENGGUNAKAN PELARUT ASAM KLORIDA

(Konsultasi minimal 8 kali)

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
27/06/2024	- Abstrak - Tujuan Penelitian - Hasil analisis XRD	
30/06/2024	- Hasil mikroskopis - Penulisan rumus kimia - Format penulisan	
5/07/2024	- Graph analisis XRD - Penulisan bahasa inggris - Graph gabungan kalsinasi	
8/07/2024	- Analisis XRD - Daftar Pustaka	
9/07/2024	- Graph tingkat Ekstraksi - Kesimpulan	
[illegible]/2024	- Format penulisan - Format artikel ilmiah	

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
15/07/2024	- Artikel Ilmiah - Poster penelitian	
18/07/2024	- Artikel Ilmiah - Poster penelitian	
30/07/2024	- Penulisan koma dan titik - Tambahkan gambar sampel - Tambahkan penjelasan singkapan	
9/08/2024	- Gambar sampel - Singkapan	