

Bagian: QC

ANALISA PERMINTAAN BARANG

Due date : 11 Mei 2026

Tanggal : 10 Maret 2026

No	Kode Barang	Nama Barang	Satuan	Stok Saat Ini (A)	Rencana Kebutuhan (B)	Kekurangan (A -B + C)	Pending Penerimaan (C)	Jumlah	Realisasi Pembelian	Realisasi Penggunaan
1	UJTS00019	Kolom Zinc Amalgam	Un	0	1	-1	0	1	0	0

Catatan :

Kolom Zinc Metal Amalgamated, Granular, 100g Code No: 18-607-858

- Digunakan untuk memisahkan senyawa dari sampel dengan cara melewati fase gerak melalui kolom.
- Kolom tersebut digunakan untuk penetapan kadar bahan baku Titanium Dioxide.
- Pemesanan pertama kali Dept. QC
- Estimasi harga: Rp.11.433.000

Latar Belakang Permintaan

- Sehubungan dengan adanya pengujian penetapan kadar pada bahan baku Titanium Dioxide sesuai dengan USP 47 maka diperlukan pengadaan kolom tersebut.
- Sebelumnya pengujian dilakukan di laboratorium external.
- **Terlampir USP 47, metode analisa, rencana kebutuhan dan penawaran harga.**

Pemohon

 10/26
ADA 103

Mengetahui

 10/03 2026
ofc

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Titanium Dioxide

TiO₂ 79.87Titanium oxide (TiO₂) CAS RN®: 13463-67-7.

DEFINITION

Titanium Dioxide contains NLT 99.0% and NMT 100.5% of titanium dioxide (TiO₂), calculated on the dried basis. If labeled as attenuation grade, then Titanium Dioxide contains NLT 99.0% and NMT 100.5% of TiO₂, calculated on the ignited basis. Attenuation grade material may contain suitable coatings, stabilizers, and treatments to assist formulation.

[NOTE—If labeled as attenuation grade, then all tests and assays are conducted on uncoated, untreated material. For UV attenuation grade, the test for *Loss on Drying* does not apply. The FDA requires the content of lead to be NMT 10 ppm (µg/g), that of antimony to be NMT 2 ppm (µg/g), and that of mercury to be NMT 1 ppm (µg/g) (21 CFR 73.1575).]

IDENTIFICATION

• A.

Sample: 500 mg

Analysis: Add 5 mL of sulfuric acid to the *Sample*, and heat gently. After fumes of sulfur trioxide appear, continue heating for a minimum of 10 s. Cool the suspension, and cautiously dilute with water to 100 mL. Filter, and to 5 mL of the clear filtrate, add a few drops of hydrogen peroxide TS.

Acceptance criteria: A yellow-red to orange-red color develops immediately.

ASSAY

• PROCEDURE

Sample solution: Transfer 300 mg of Titanium Dioxide to a 250-mL beaker. Add 20 mL of sulfuric acid and 7–8 g of ammonium sulfate. Mix, heat on a hot plate until fumes of sulfur trioxide appear, and continue heating over a strong flame until the solution is complete, or until it is apparent that the undissolved residue is siliceous matter. Cool, cautiously dilute with 100 mL of water, stir, heat carefully to boiling while stirring, and allow the insoluble matter to settle. Filter, transfer the entire residue to the filter, and wash thoroughly with cold 2 N sulfuric acid. Dilute the filtrate with water to 200 mL, and cautiously add about 10 mL of ammonium hydroxide.

Blank: 200 mL of 2 N sulfuric acid

Titrimetric system

(See [Titrimetry \(541\)](#).)

Mode: Direct titration

Titrant: 0.1 N potassium permanganate VS

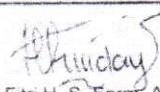
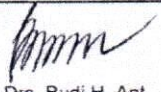
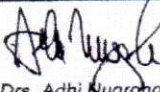
Endpoint detection: Visual

Analysis: Prepare a **zinc amalgam column** in a 25-cm Jones reductor tube, placing a pledget of glass wool in the bottom of the tube, and filling the constricted portion of the tube with zinc amalgam prepared as follows. Add 20- to 30-mesh zinc to mercuric-chloride solution (1 in 50), using about 100 mL of the solution for each 100 g of zinc, and after about 10 min, decant the solution from the zinc, then wash the zinc by decantation. Wash the zinc amalgam column with 100-mL portions of 2 N sulfuric acid until 100 mL of the washing does not decolorize 1 drop of 0.1 N potassium permanganate.

Place 50 mL of ferric ammonium sulfate TS in a 1000-mL suction flask, and add 0.1 N potassium permanganate until a faint pink color persists for 5 min. Attach the Jones reductor tube to the neck of the flask, and pass 50 mL of 2 N sulfuric acid through the reductor at a rate of about 30 mL/min. Pass the *Sample solution* through the reductor at the same rate, and follow with 100 mL each of 2 N sulfuric acid and of water. During these operations, keep the reductor filled with a solution or water above the upper level of the amalgam. Taking precautions against the admission of atmospheric oxygen, gradually release the suction, wash down the outlet tube of the reductor and the sides of the receiver, and titrate immediately with *Titrant*. Perform a blank determination, and make any necessary correction.

Calculate the percentage of titanium dioxide (TiO₂) in the sample taken:

$$\text{Result} = \frac{(V_c - V_b) \times N \times F}{W} \times 100$$

 mersi PT. MERSIFARMA TM. DIVISI MANUFACTURING SUKABUMI-INDONESIA		METODE PENGUJIAN BAHAN AWAL TITANIUM DIOXIDE		Halaman 2 dari 7 Nomor Dokumen : 2RD20/MPBAP/095.01 Tanggal berlaku : 24 Oktober 2016	
		DEPARTEMEN RESEARCH AND DEVELOPMENT		SEKSI ANALYTICAL DEVELOPMENT	
Disusun Oleh :  <u>Rizki N. S. S. Farm. Apt.</u> R&D Staff Tanggal : 12/10/16		Diperiksa Oleh :  <u>Fitri H. S. Farm. Apt.</u> R&D Ast. Manager Tanggal : 12/10/16		Disetujui Oleh :  <u>Drs. Budi H. Apt.</u> R&D Manager Tanggal : 12/10/16	
		 <u>Selvi, S. Farm. Apt.</u> QA Manager Tanggal : 13/10/16		 <u>Drs. Adhi Nugroho P. Apt.</u> Plant Manager Tanggal : 12/10/16	
				Pengganti No : 2RD20/MPBAP/095.00 Tanggal : 01 Agustus 2016	
		Saring dengan kertas 0.45 μm, dan cuci dengan menyeluruh dengan menggunakan <i>sulfuric acid</i>. Encerkan filtrat dengan air 200 mL, dan tambahkan 10 mL <i>ammonium hydroxide</i> dengan hati-hati. <u>Blangko</u> 200 mL <i>sulfuric acid</i> 2 N <u>Prosedur</u> - Siapkan kolom <i>zinc amalgam</i> dalam tabung pereduksi Jones yang berukuran 25 cm. - Tempatkan kapas penyumbat pada bagian bawah tabung, kemudian masukkan <i>zinc amalgam</i> yang telah disiapkan ke dalam tabung. - Tambahkan <i>zinc</i> yang berukuran 20 - 30 mesh ke dalam larutan <i>mercuric chloride</i> (1 dalam 50). Gunakan 100 mL larutan untuk setiap 100.0 g <i>zinc</i> dan setelah 10 menit tuangkan larutan dari <i>zinc</i>, kemudian lakukan pencucian <i>zinc</i> secara dekantasi. - Cuci kolom <i>zinc amalgam</i> dengan 100 mL <i>sulfuric acid</i> 2 N sampai 100 mL hasil pencucian tidak merubah warna <i>potassium permanganate</i> 0.1 N. - Masukkan 50 mL <i>ferric ammonium sulfate</i> ke dalam 1000 mL labu hisap, kemudian tambahkan <i>potassium permanganate</i> 0.1 N hingga diperoleh warna merah muda yang tidak hilang selama 5 menit. - Pasangkan tabung pereduksi jones pada leher labu hisap, kemudian alirkan 50 mL <i>sulfuric acid</i> 2 N dengan laju alir 30 mL/menit. - Alirkan larutan sampel ke dalam tabung dengan laju alir yang sama, kemudian alirkan 100 mL <i>sulfuric acid</i> 2 N dan 100 mL air. - Selama proses pengerjaan, pastikan tabung pereduksi tetap tersisi dengan larutan atau air di atas lapisan <i>amalgam</i>. - Lakukan dengan hati-hati untuk mencegah masuknya oksigen, keluarkan larutan hasil dekantasi secara bertahap kemudian bilas outlet pada tabung pereduksi dan dinding labu hisap. - Segera lakukan titrasi dengan <i>potassium permanganat</i> 0.1 N. $\% \text{ Titanium Dioxide} = \frac{(V_s - V_b) \times N \times F \times 100}{W}$ Keterangan : Vs = Volume Titran sampel (mL) Vb = Volume Titran blangko (mL) N = Normalitas Titran (mEq/mL) F = Faktor kesetaraan, 79.88 (mg/mEq) W = Bobot sampel uji			

No	Nama Bahan Baku	Kolom	Merk	Kebutuhan per batch (g)	Jumlah kedatangan	Total kebutuhan (g)
1	Titan dioxide	Zinc Metal Amalgamated, Granular, 100g	Fisher	40	1	40
Total						40

Perkiraan kedatangan 2026 adalah 1 kali di bulan Juli.



PT. KARUNIA JASINDO
Jl. Jembatan Tiga Raya No. 36AG
Jakarta 14440 , Indonesia
T: +62 21 663 0353
www.karusindo.com

PRICE QUOTATION

Date: 29 Jan 2026

Quotation No.: 2026/PQ-KJ/I/1156

To:

PT. MERSIFARMA TIRMAKU MERCUSANA

JL. Raya Pelabuhan KM. 18 Cikembar
Sukabumi Jawa Barat 43347

Ship:

PT. MERSIFARMA TIRMAKU MERCUSANA

JL. Raya Pelabuhan KM. 18 Cikembar
Sukabumi Jawa Barat 43347

Customer ID: IN-03-1800330

Prepared by	Inquiry No.	Inquiry Date	Shipping Method	Currency	Payment Term	Payee Bank Account
Dhea Rizki Pratiwi	Via Email / Phone	29 Jan 2026		IDR	30 Days	-

No.	Brand	Code No.	Product	UOM	Qty	Unit Price	Disc. %	Amount	Estimated Delivery	EUD
1		18-607-858	Zinc Metal Amalgamated, Granular, 100g	Unit	1	10,300,000	0	10,300,000	Indent, 2-3 months	☐

Note

- Pembayaran ditujukan kepada rekening Bank dibawah ini:
Bank: BCA, Cab. Pluit Timur
Atas Nama: PT. Karunia Jasindo
No. Rekening: 386-3018877
- Stock dapat berubah sewaktu-waktu
- Masa berlaku penawaran ini 30 hari semenjak di terbitkan
- Surat Penggunaan Produk diperlukan bila EUD di check

Untaxed Amount : Rp 10,300,000.00

VAT 11%(PPN) : Rp 1,133,000.00

Total Amount : Rp 11,433,000.00

Salesperson: Carina (carina@karusindo.com)