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Develop with us

Miniature-scale research & development technology

NEUTRALISER/WASHER/BLEACHER

FT66

explorearmfield.com



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ISO 9001:2008
2YR EXTENDED WARRANTY

FEATURES

- Simple Controls
- Surfaces in contact with the process fluid are stainless steel
- Agitation by variable speed flat blade impeller (variable to 1800rpm)
- Working vacuum of 75mm Hg (ABS) with liquid ring vacuum pump
- Pressure leaf filter designed to BS5500
- 25 litre vessel designed to BS5500
- Compact and self-contained
- Cooling coil
- Extraction pump
- Electrical heating element

BENEFITS

- Ease of use
- Small quantities of oil can be processed
- No consumable filter elements required

ISSUE - 3



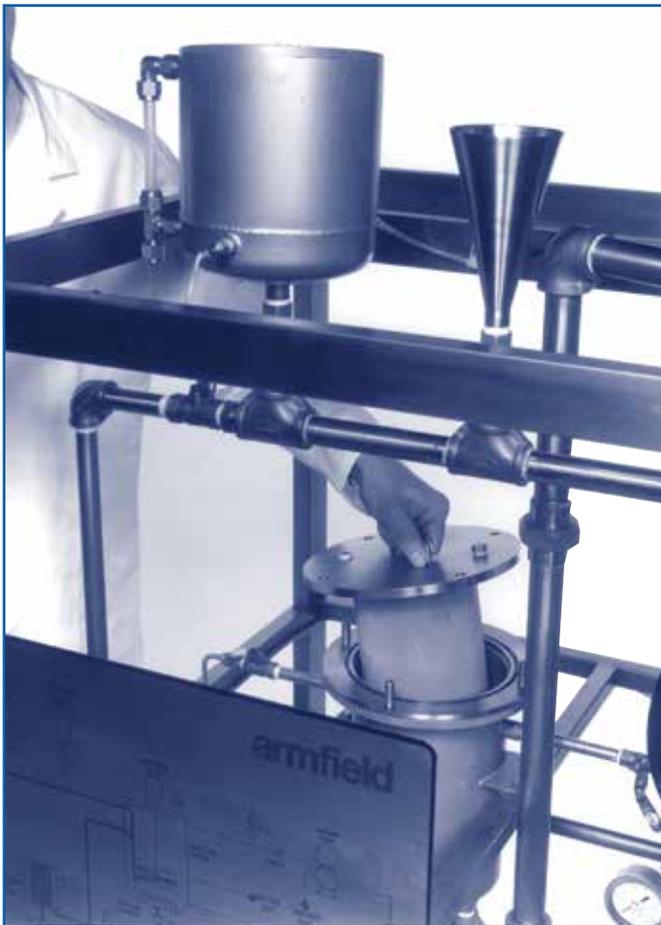
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Performance:

Independent tests carried out by Manchester Metropolitan University, Hollings Faculty using crude Rapeseed oil gave the following analytical results:-

| | Crude Oil | Neutralised | Bleached |
|-----------------|--------------------|----------------------|----------------------|
| Iodine value | 117 | 117 | 117 |
| Free fatty acid | 1.5% | 0.12% | 0.1% |
| Colour | 70 Yellow 7 Red | 50 Yellow 3.3 Red | 20 Yellow 0.5 Red |
| Soap in oil | 3.2 Blue — | < 100ppm | nil |
| Peroxide value | 0.4 mequiv/kg | nil | nil |



Removing the element of the pressure leaf filter

CAPABILITIES

- Effect of variation of operating parameters such as temperature, vacuum and degree of agitation
- Selection of the correct amount and strength of caustic solution for the particular oil
- Selection of the type and quantity of adsorbent for the bleaching operation
- Optimization of operation of a pressure leaf filters

Modes of Operation

Crude oil, freshly extracted from seed contains undesirable impurities, which must be removed. These include free fatty acids, phosphatides, colour pigments and fine particles. Using the FT66, the crude oil can be refined by operation in the following modes:-

Neutralisation/Washing:

Free fatty acids are removed by neutralising them with a strong base such as caustic soda, which forms a water-soluble soap. The soap is then removed by a combination of thorough washing, gravity settling and draining. Phosphatides are also removed by washing, settling and draining after the addition of phosphoric acid to form water-soluble gums. Any water remaining in the oil is dried by heating the oil under vacuum.

Bleaching:

Colour pigments are removed or reduced by the addition of an adsorbent such as Fullers Earth. The desired colour of the oil can be obtained by adjusting the amount and type of earth used and the physical conditions under which the bleaching operation is carried out.

Filtration:

After bleaching, an efficient filtering process ensures that the earth and other particulates are removed leaving a clean, refined oil ready for further processing such as hardening and deodorising. The filter used for this is a pressure leaf type, which is commonly used in the edible oil industry for the removal of adsorbent.

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Armfield R&D products include:

316 Stainless steel ✓

CE certification ✓

Extended warranty as standard ✓



An ISO 9001 Company

Head Office:

Armfield Limited
Bridge House, West Street,
Ringwood, Hampshire.
BH24 1DY England

Tel: +44 1425 478781
Fax: +44 1425 470916
E-mail: sales@armfield.co.uk

U.S. Office:

Armfield Inc.
9 Trenton - Lakewood Road
Clarksburg NJ 08510
Tel/Fax: (609) 208-2800
E-mail: info@armfieldinc.com

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Specifications

Reactor vessel:

Material: stainless steel
Total volume: 45 litres
Working volume: 25 litres
Diameter: 0.30m
Height: 0.65m
Heating element: 3.0kW
Cooling coil area: 0.12m²
Agitator speed: 250-1800rpm

Reagent vessel:

Material: stainless steel
Working volume: 3 litres
Diameter: 0.165m
Height: 0.20m
Heating element: 1kW

Earth hopper:

Material: stainless steel
Volume: 0.3 litre

Pressure leaf filter:

Material: stainless steel
Filter volume: 3.8 litres
Filter cake capacity: 1 litre
Filtering area: 0.09m²
Filter screen: 110 mesh (0.3mm wire)
Maximum pressure: 3.0 bar

Vacuum pump:

Type: liquid-ring
Sealant: water
Working vacuum: 75mm Hg (ABS)
Sealant flow rate: 8 l/m

Requirements

Electricity supply: Three phase (see ordering codes)
Water supply: 30l/m @ 3.0 bar min/5.0 bar max
Compressed air: 20l/s @ 3.0 bar min/10.0 bar max

Ordering codes

FT66-C: 415V/3ph/50Hz, (14kW)
FT66-D: 208V/3ph/60Hz, (10kW)
FT66-E: 380V/3ph/50Hz, (13kW)
FT66-F: 220V/3ph/60Hz, (10kW)

Shipping specification

Volume: 2.0m³
Gross weight: 500kg

Overall dimensions

Height: 1.90m
Width: 1.28m
Depth: 0.75m

The Armfield range includes HTST/UHT/aseptic systems, carbonator/filler/cappers, spray dryers/chillers, multifunction batch processors, ice cream freezers, margarine crystallisers, extractors, edible oils processors and more. For further information about our products and services, or to book a trial at one of our trials facilities, please contact us.