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MICROTAL® OLV-32

TECHNOLOGICAL AGENT FOR OLIVE OIL EXTRACTION

The virgin olive oil is obtained from the fruit of the olive tree by mechanical procedures or other physical procedures, in conditions that do not cause the alteration of the oil and without any treatment more than cleaning, decantation, centrifugation and filtration. For that reason it is called a “natural product”.

The oil is located in the olives mesocarp and you can find it in the state of tiny drops, within the vacuoles of the cells.

The first step for the oil extraction is to grind the olives, and with this you produce the ripping of the texture, so you can obtain the olive paste.

The oil globules remain freely, forming groups in some cases and they form drops of different sizes in contact with the vegetation water (alpechín). The paste is made of solid phases (pulp and pit pieces) and liquid phases (drops of alpechín and oil). The paste preparation requires to be beaded to facilitate that the drops of less stability, generally the big ones, joined together forming big drops (oil bags) easily extracted.

Based on the olive variety and the maturity index, which the olives have when they are picked up, sometimes the calls “difficult pastes” can appear. At this moment you should use the microtalc (M.T.N.) as coadjuvant, which agglutinates the small oil drops, facilitating its extraction and producing the olive oil clarification and a reduction of the solid level and fat in the alpechín.

The use of M.T.N as technological auxiliary is very common in Spain and Italy. The new European norm (Regulation EC 1513/2001) has taken effect since November 2003, which indicates that the M.T.N is the only one co adjuvant allowed.

The MICROTAL® OLV-32 is a natural micronized talc of microcrystalline laminate structure. Its qualities as a technological co adjuvant are searched by professionals in order to increase the yield of oil extraction, at the moment of the olives milling.

The benefits, that the addition of MICROTAL® OLV-32 in the paste treatment produces, are:

- Important increase of the industrial yield
- Increase of cold oil extraction
- Increase of the production capacity of the plant
- Improve the centrifugation results
- Increase the Virgin Olive Oil production
- Produce oil with less acidity.

MICROTAL® OLV-32 is a product in which was developed a relation between the particle size versus the specific surface that allows significantly to increase the oil liberation in the processes of beaten the paste.

MICROTAL® OLV-32 improves considerably the texture of difficult paste and increases the yield of the oil extraction, all this without affecting the paste intrinsic properties and without modifying the oil physicochemical and organoleptic characteristics.

The dose of MICROTAL® OLV-32 to use for oil extraction is from 0,5 to 3%, too high doses can cause oil loss in the bagasse of olives. The addition is at the beginning of the beaded, it is not necessary to apply it in the same beater that is the mill, since there would be loss of aromas and complications in the work of the talc.

All the productive processes that are used in the manufacture of MICROTAL® OLV-32, are certificated by ISO 9001-2000 granted by the Det Norske Veritas for “Production and Sale of Dry and Slurry Industrial Minerals”

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TECHNICAL CHARACTERISTICS

COMPOSITION:

Natural Magnesium Silicate Hydroxide.

Product made of natural Talc, laminar structure, physical and chemically inert. Free of Asbestos. Manufactured from high purity white Talc.

CHEMICAL TESTS:

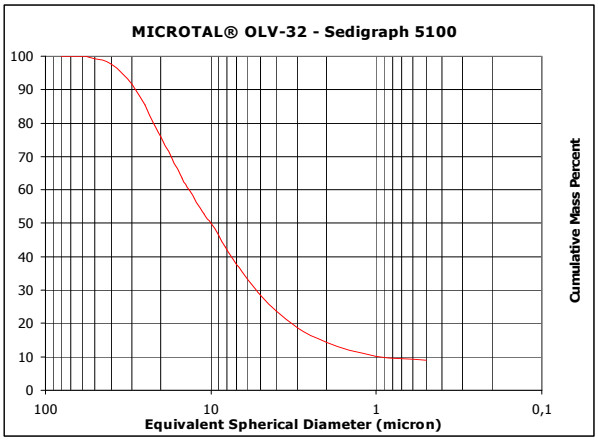
SiO_2	Min. 40.00 %
MgO	Min. 32.00 %
Pb	< 0.01 mg/kg
As	< 0.01 mg/kg
pH	9.5

SPECIFICATIONS:

Moisture:	Máx. 0.15 %	ISO 787/2
Bulk Density Loose:	0.60 g/cm^3	ISO 787/11
Bulk Density Compacted:	0.72 g/cm^3	ISO 787/11
Whiteness:	Min. 58.00 %	Photovolt 577

GRAIN SIZED:

Dry Sieve Analyses - 325 mesh (45 µm):	Máx. 4.0 %	ISO 787/7
Mean Particle Size:	9.80 µm	Sedigraph 5100



MICROTAL® OLV-32 fulfils the criteria of purity required for their use like nourishing additive of the National Service of Health and Agro-alimentary Quality of the Argentine Republic (SENASA)

- **Elaborator Establishment Nº 8567/A/**
- **Nourishing and Helping Additive Registry of Nº Technology 012-138**

MICROTAL® OLV-32 satisfies the Specifications and Criteria required for The Food Standards Code of Australia and New Zealand

The presented/displayed data reflect an average of the obtained results, reserving to the company the right to modify them.

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Analysis of Extractability Institute of the Fat, Seville Spain

In order to determine the effect of MICROTAL® OLV-32 in the olive oil extraction process and also to make a comparison with the Natural Micronized Talc of common use at world-wide level, our company made diversed studies in the Institute of the Fat in Seville, Spain.

The tests were made by comparative experience on scale of laboratory with the Analyzer of Yield of Olives ABENCOR series 100, that consist of a mill of hammers, centrifugal machine and thermo beaded.

VARIETY PICUAL

Olives Characteristics - PICUAL	
Humidity (%)	52.14
Total oil content referred dry matter (%)	43.05
Total oil content referred humid matter (%)	20.61
Oil Acidity (º)	0.25

YIELD OF EXTRACTION ABENCOR (%)

	Oil standard	Talc standard	MICROTAL® OLV-32
Dose	**0 %**	**1.6 %**	**1.6 %**
	14.45	16.77	16.77
	13.90	16.62	16.92
	14.75	16.70	16.90
Average	**14.37**	**16.70**	**16.86**

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VARIETY VERDIAL

Olives Characteristics - VERDIAL	
Humidity (%)	59.23
Total oil content referred dry matter (%)	47.36
Total oil content referred humid matter (%)	19.31
Oil Acidity (º)	0.38

YIELD OF EXTRACTION ABENCOR (%)

	Oil standard	Talc standard		MICROTAL® OLV-32	
Dose	**0 %**	**1 %**	**2 %**	**1 %**	**2 %**
	9.15	10.68	10.60	10.37	10.07
	10.07	10.37	10.39	10.22	10.22
	10.07	10.54	10.60	10.31	10.16
Average	**9.76**	**10.53**	**10.53**	**10.30**	**10.15**

Final considerations:

As a result of the experience of Natural Microtalc Witness and MICROTAL® OLV-32 of test 1, the effect of improvement in the yield with olives of the Picual variety is appraised in both talcs, being observed that to the dose of 1.6% a better tendency in MICROTAL® OLV-32 exists light.

In test 2, with the Verdial variety, it presented/displayed a greater difficulty due to a superior humidity content, verifying itself that both products have improved the level of oil separation.