



# mustard oil

## **the cooking oil with a low heart risk profile**

Mustard Oil is extracted at a low pressure at low temperature (40-60°C). It contains 0.30-0.35 % essential oil (Allyl Iso-Thiocyanate) which acts as preservative.

The Kachchi Ghani Oil is a nutritious oil used by common man.

Mustard Oil is one of the best cooking oil particular for heart patient because it has an Omega 3 (MUFA) and 6 Fatty Acid composition (Linolic and alpha Linolic Acid respectively) in good proportion close to 10:1 rarely found in any other oil. The ideal ratio of Omega 6 and Omega 3 is 10:1.



<b>Fatty Acid Composition of Mustard Oil</b>		
<b>Sr.</b>	<b>Name of Acid</b>	<b>Range</b>
1	Palmitic	1-3%
2	Stearic	0.4-3.5%
3	Arachidic	0.5-2.4%
4	Behenic	0.6-2.1%
5	Lignoceric	0.5-1.1%
6	Oleic	12-24%
7	Eicosenoic	3.5-11.6%
8	Erucic	40-55%
9	Linoleic	12-16%
10	Linolenic	7-10%

**KachchiGhani Mustard Oil** Product Characteristics

<b>Visual</b>	Clear. Free from sediments, suspended matter, separated matter
<b>Colour on Lovi bond scale in ¼" Cell expressed as Y + 5R</b>	50 Max
<b>Specific gravity at 30 Degree Cel.</b>	0.907 to 0.910
<b>Refractive Index at 40 Degree Cel.</b>	1.4646 to 1.4662
<b>Saponification Value</b>	168 to 177
<b>Iodine Value</b>	96 to 112
<b>Unsaponifiable matter</b>	1.20 % max.
<b>Percentage of natural essential oils</b>	0.25 to 0.60
<b>Acid Value</b>	1.5 Max.
<b>Bellier's Turbidity</b>	23-27.5 Degree Cel.
<b>Presence of other oils</b>	Nil
<b>Rancidity</b>	Free from any rancidity
<b>Colour</b>	Added Colouring matter
<b>Moisture &amp; Insoluble matter</b>	0.25 Max.
<b>Argemone Test (TLC)</b>	Negative
<b>Poly Bromide Test</b>	Negative
<b>Hydrocyanic Acid Test</b>	Negative
<b>Rancidity Test(Kries)</b>	Negative
<b>Mineral Oil Test</b>	Negative
<b>B.R Reading (40 degree Cel.)</b>	58-60.5
<b>Taste &amp; Flavour</b>	Characteristic



## Refined Vegetable Oil (Mustard) Product Characteristics

<b>Visual Clear.</b>	Free from sediments, suspended matter, separated matter
<b>Moisture &amp; insoluble</b>	0.10% max.
<b>Colour in 1" cell on the Lovi bond scale expressed as (Y + 5 R)</b>	4 Maximum
<b>Refractive index at 40 Degree Cel.</b>	1.4646 to 1.4662
<b>Saponification Value</b>	168 to 177
<b>Iodine Value</b>	96 to 112
<b>Acid Value</b>	0.2 Max.
<b>Unsaponifiable matter (percentage by weight)</b>	1.2
<b>Bellier's turbidity temperature Test OC.</b>	23-27.5% Max.
<b>Presence of other Oils</b>	Nil

## A Favorable Composition

- Mustard oil has 30 per cent protein, calcium, phytins, phenolics and natural anti-oxidants.
- Mustard oil contains high amount of mono-unsaturated fatty acids and a good ratio of polyunsaturated fatty acids, which is good for heart. It contains the least amount of saturated fatty acids, making it safe for heart patients.
- Glucosinolate, the pungent principle in mustard oil, has anti bacterial, anti fungal and anti-carcinogenic properties, which account for many medicinal utilities of the oil.
- The relatively high level of oleic acid and the favorable balance between linolenic and linoleic acids is present in mustard oil. It may be said that it is the safest oil and is as good as any other edible oil.

## Mustard Oil good for Indian Hearts

According to a recent study diets including mustard oil and vegetables (especially green leafy vegetables) could contribute to lower the risk of heart disease among Indians. Ischemic heart disease (IHD) is a leading cause of death in India. To find out the effect of dietary changes on heart disease risk in India, researchers conducted a study involving Indians in New Delhi and Bangalore.

The study included 350 people with acute myocardial infarction (i.e. heart attack) and 700 healthy people. The long-term dietary intake of the participants was evaluated using food-frequency questionnaires.

At the end of the study, the researchers observed that vegetable intake and use of mustard oil was significantly associated with reduced risk of Ischemic heart disease. People who consumed 3.5 servings of green leafy vegetables every week had 67% less risk of developing heart disease as compared to those who just consumed 0.5 serving of green leafy vegetables per week.



Mustard oil, which is rich in alpha-linolenic acid (an essential fatty acid which has been shown to reduce cholesterol levels, and reduce the risk of heart diseases), was linked with 2 fold lower risk compared to sunflower and other oils. The researchers also said that people who use mustard oil for frying reduce their risk of heart attack by almost 71%.

Mustard oil was widely used in Indian homes earlier but in modern times has been replaced by the so-called heartfriendly oils. This study seems to prove the superiority of long forgotten mustard oil to the present day vegetable oils.

Mustard is an ancient cure - and a modern one. For instance, Researchers at the University of Manitoba in Winnipeg, Canada, reported in October, 2003 that they had found that dry mustard mixed into hamburger could kill E. coli bacteria. Mustard, it seems, is an "antimicrobial"—that is, it can destroy or at least impede the growth of microorganisms.

The results of a study were announced showing that frying foods in mustard oil lowers the risk of heart attacks by 71 percent. Also, diets that include green leafy vegetables splashed with mustard oil can help lower the chances of a heart attack, researchers found.

This study was conducted at eight hospitals in India by researchers, some of whom were from the Harvard University's School of Public Health.

**The efficacy of mustard oil in protecting against heart attacks was attributed to its abundance of omega-3 polyunsaturated fatty acids.**

**So, it actually might be a good idea to listen to your grandma and switch to mustard oil after all!**



KS Oils Limited  
Jiwajiganj, Morena - 476001 (MP) India.  
Phone : +91-7532-300000 • Fax : +91-7532-405060 & 300106  
Email : mail@ksoils.com • Website : www.ksoils.com  
BSE: 526209 • NSE:KSOILS • Bloomberg:KSO@IN • Reuters:KS0I.B0

© 2008, KS Oils Limited. All Rights Reserved

The information contained herein has been obtained from sources believed to be reliable. KS Oils Limited disclaims all warranties as to the accuracy, completeness or adequacy of such information. KS Oils Limited shall have no liability for errors, omissions or inadequacies in the information contained herein or for interpretations thereof. The reader assumes sole responsibility for the selection of these materials to achieve its intended results. The opinions expressed herein are subject to change without notice.