

# Tech Talk

Monthly Newsletter by Spectro Group

## Director's Desk

With great enthusiasm, we would like to thank you for making our Newsletter a success. Your positive response and feedback for our Newsletter encourages us to present before you the best current articles. We are happy to share with you, our monthly Newsletter "Tech-Talk" which is designed to be an elemental source for leading information related to developing technologies, ingenious techniques and innovative approaches. This newsletter is contemplated to highlight electrifying forthcoming activities and resources of our organization.



Kuldeep Dhingra  
Managing Director



Sushant Gupta  
Executive Director

We invite you to a new paradigm created by Spectro to examine the resources on our website which includes details of our amplifying services using science to harness cutting-edge technologies and experience the Spectro difference.

## Brief about Spectro

During the span of 20 years, Spectro Group of companies has created a globally recognized position in the field of Testing, Calibration, Auditing, Certification, Training, Inspection, R&D, Special Purpose Equipment Designing & Manufacturing and various other activities.

**Spectro Analytical Labs Ltd.** is a self-reliant Multidisciplinary Laboratory providing top class services. We are also in a process to explore services in the field of Geo-Technical, Welding, Safety Compliance, Clean Development Mechanism, Mining, Environment, etc.

**Spectro Lab Equipments (P) Ltd.** is one of the reputed manufacturers of Environment & Coal Laboratory Equipments and also deals with their sale and service setups. We are the exclusive manufacturers of equipments which include RCPT, Bomb Calorimeter, Ash Fusion Tester, Salt Spray Chamber, Proximate Analyzer and Stress Relaxation Tester.

**Spectro Weld Institutes (P) Ltd.** provides exemplary short-term courses and full time courses on specialized topics. The welder, if required can get certification by IWS (Indian Welding Society). We are creating a pool bank of trained and certified welders for ready deployment for projects in India & Abroad.

## Will your buildings be standing against Earthquakes?

If your house is closer to large earthquakes, it may suffer several structural damages. Steps to minimize the extent of these damages can be taken to save lives. By reinforcing the foundation, walls, floors and roof, the ability to withstand lateral and vertical forces can be enhanced up to a significant level. Houses that can absorb and evenly distribute horizontal shifting are proved to be the best in an earthquake.



Contd.

## *Cone Calorimeter- A Newfangled Equipment by SLE*

Spectro Lab Equipments Pvt. Ltd., which is committed to be the leader in designing and manufacturing industries has developed Cone Calorimeter which is one of the most important tools in Fire Safety and Analytical services.

This equipment is one of the modern bench scale instruments in the field of Fire Safety Test on materials. This instrument is used for the determination of the fire behavior of the various samples in the solid state.

Cone Calorimeter collects important information about various parameters associated with the burning characteristics such as ignition time, mass loss, combustion products, heat release rate and several other parameters as well.



*Cone Calorimeter - ISO 5660 & ASTM E1354*

### **Contd. (Will your buildings be standing against Earthquakes?)**

In order to provide safe and healthy habitat, careful considerations need to be paid to the building construction activities. The National Building Code provides guideline for regulating the building construction activities across the country. The Building Code for Structure require buildings to withstand the loads they are likely to experience during construction, throughout their life and when they are altered.

These codes were formulated just a couple of years ago and the old buildings which were build decades back, have no data or design for their structures. In such cases, Non Destructive Testing plays an important role in analyzing the structural safety by checking the strength of columns, slabs, balconies, beams, etc. Records of building response to earthquakes, especially those from structures that failed or were damaged, have led to many revisions and improvements in building codes.

Professional structural engineers can provide unbiased opinions about necessary improvements. Building codes provide the first line of defense against future earthquake damages and can help to ensure public safety.



***Spectro is accredited as per ISO/IEC 17025: 2005 for carrying out Non Destructive Testing of buildings and structures. We are deeply involved in providing assistance for structural engineering and strategies for earthquake resistance. We undertake turn key projects for both new and existing buildings and we have completed several projects for NDT on existing concrete structures. We are associated with the leading structural engineers to provide services which are beneficial to tackle several technical challenges and complex structural challenges.***

### **References**

- [Earthquake.usgs.gov](http://Earthquake.usgs.gov)
- [Bis.org.in](http://Bis.org.in)

# Coconut Oil: The super healthful

For years, the Coconut oil has had a bad reputation because it contains a high level saturated fat; the recent studies on animal products have revealed that the fats in coconut oil are rather healthy. Moreover, the oil has now found space in health food stores and supermarkets, as well as in restaurants and home kitchens where it is being used for frying and baking.

## Approximate Composition of Coconut Oil

Cholesterol: 0%

Trans fat (fatty acids): 0%

Poly unsaturated fat (fatty acids): 3%

Monounsaturated fat (fatty acids): 6%

Saturated fat (fatty acids): 91%

## Cholesterol and Heart Health

Coconut oil is 100 per cent fat and is responsible for several heart problems. Though research in humans has been remarkably limited, the saturated fats in coconut oil appear to be more neutral in their effect on blood cholesterol than that in meat. Saturated fats increase the Low Density Lipoprotein (bad) cholesterol, but they differ in chemical structure. Lauric acid is the main saturated fatty acid in coconut oil. According to few researches, it has been found that lauric acid raises High Density Lipoprotein (good) cholesterol and probably Low Density Lipoprotein as well.

## Specifications as per Food Safety and Standards (Food Products Standards and Additives) Regulations, 2011

Coconut oil should be clear and free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, or mineral oil.



It shall conform to the following standards:

- Butyro-refractometer reading at 40°C: 34.0 to 35.5
- Refractive Index at 40°C: 1.4481-1.4491
- Saponification value: Not less than 250
- Iodine value: 7.5 to 10
- Polenske value: Not less than 13
- Unsaponifiable matter: Not more than 1.0 per cent
- Acid value: Not more than 6.0
- Test for argemone oil shall be negative.
- It may contain food additives as per the regulation.
- If the oil is obtained by the method of solvent extraction and if the oil is imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining. The oil so refined shall not contain 'hexane' more than 5.00 parts per million (ppm).

**Spectro provides world class services for testing of Oils & Fats as per the specified National & International Standards. We carry out all the physical, chemical and microbiological testing of all the food products (raw or cooked).**

## Technical Showcase: Ash Fusion Tester

Ash Fusion Tester is the equipment which is used to determine ash fusibility at higher temperatures under oxidizing or reducing conditions. This technique helps to select Coal that is used for Power Generation.

The ash fusion tester provides intimation about the softening and melting behavior of coal ash at high temperatures. It determines the temperature by heating a molded coal sample within a high temperature furnace up to a temperature more than 1000°C in reducing as well as oxidizing conditions. The cone of molded ash is observed when the temperature rises. The four critical ash softening temperatures (Deformation Temperature, Softening Temperature, Hemisphere Temperature and Flow Temperature) are determined by monitoring the increasing deformation of the sample when it is heated.

### Area of Applications:

- Ø Coal Industry
- Ø Electric power
- Ø Commodity inspection
- Ø Chemical industry

- Ø Papermaking
- Ø Metallurgy
- Ø Environmental protection
- Ø Collate industry



**Spectro provides ash fusion testing facility with this valuable tool to evaluate and control the slag potential of the coal. We are one of the leading quality solution providers. Right from inspection and testing to training and quality assurance, we add value to our customers by enhancing the quality and safety of their products.**

## Major Activities

Testing      Calibration      Training      Inspection      R&D      Automation      Reverse Engineering

- Metals & Alloys
- Food and Agro Products
- Electrical & Electronics
- Rubber & Polymers
- Coal Solid Fuels & Petroleum
- NDT
- Building Materials
- Leather & Textiles
- Paper & Packaging Materials
- Hazardous Substances
- Water & Environment
- Minerals & Chemicals

## Our Joint Venture Labs

Spectro Testing & Research Center Pvt. Ltd. (Jaipur)  
Spectro Research Lab Ventures (P) Ltd. (Kanpur)  
Spectro Testing (P) Ltd. (Jammu)  
Spectro SSA Labs (P) Ltd. (Mumbai)  
Spectro Global Experts Pvt. Ltd. (Bhubaneswar)  
Spectro Shyam Labs (P) Ltd. (Kolkata)

## Our Collection Centers

PATA (U.P.)  
Roorkee (Uttarakhand)  
Durgapur (West Bengal)  
Jaisalmer (Rajasthan)  
Hyderabad (Telangana)  
Patna (Bihar)



We will be pleased to receive your valuable queries, feedback and suggestions on our email ID: [newsletter@spectrogroup.com](mailto:newsletter@spectrogroup.com)

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