

Government of India
Department of Atomic Energy
BARC Facilities, KARP

Date: 15/12/2021

TO WHOM IT MAY CONCERN

This is to certify that Mr. Thulasi Raman student of SATHYABAMA Institute of Science and Technology has successfully completed internship in the field of Analysis of Various oils from 01.12.2021 to 15.12.2021 under the guidance of me. During the period of his internship program with us he had been exposed to different processes and was found diligent, hardworking and inquisitive.

We wish him very success in his life and career.

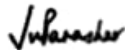
R. Sathiyarayan
15/12/2021
(Dr. R.Sathiya Narayanan)
Research Supervisor
(Faculty of Science &
Humanities, Chemistry)

Dr. R. SATHIYANARAYANAN Ph.D.
SCIENTIFIC OFFICER
KARPBARCF
DEPARTMENT OF ATOMIC ENERGY
GOVT. OF INDIA, KALPAKKAM

Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) July 2021 Semester
Score Card for Final Proctored Exam

Roll Number	TN01020022	Application Number	68550199	
Candidate's Name	THULASI RAMAN	Date of Birth	01-07-2001	
Gender	Male	Nationality	Indian	
Person With Disability (PWD)	No	Category	General	
SCORE DETAILS				
Course Code	cec21-ag12	-	-	-
Course Name	Food Chemistry	-	-	-
Date of Exam	21.02.2022	-	-	-
Maximum Marks	100	-	-	-
Marks Obtained	52.00	-	-	-
Marks Obtained (words)	Fifty Two point Zero Zero Only	-	-	-

Date of Declaration of Result: 28-04-2022


Senior Director (Exam), NTA

Note

1. Particulars of the candidate have been indicated as mentioned by him/her in the online application form , which are subject to verification later.
2. Candidate, if found submitting incorrect information or tampering with the Score Card, will be considered as using unfair means and his/her candidature will be cancelled.
3. Candidates must preserve this Score Card till the result process is complete.
4. Final scores & certificates will be given by respective National Coordinators

Print

View Another



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

PROFESSIONAL TRAINING REPORT

ACKNOWLEDGEMENT

Deepest sense of gratitude indebtedness to all the members of the panel “method of analysis”and experts .

I extend my graceful thanks to workers in the site those helped me in moral and material need as well as sharing me their knowledge to improve my fluential knowledge to the real works .

**My special thanks to Dr .
SATHIYANARAYANAN for helping me in all aspects and appreciate me to spend may all time in the woekplace during my internship time .**

CONTENT

- 1 . INTRODUCTION**
- 2 . TYPES OF OIL**
- 3 . OIL CHEMICAL FORMULAE**
- 4 . VEGECABLE OIL**
- 5 . ANALYSIS OF OIL**
- 6 . USES OF OIL**
- 7 . REPORT SUMMARY**

OIL





INTRODUCTION

At the time of atlantians earliest oil to be used on human body, was crued minerals oil or petroleum back in 23,000 BC. At 7000 BC both Rich and Mesopotomia, pomades and oils based on animal and vegetable fats were already in use.

Oils and fats are important parts of the human diet and more than 90 per cent of the world production from vegetables, animals and marines are used as food source for oils fats for human diet.

Crude oil is a mixture of hydrocarbons that exists inliquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.

Four main types of crude oil are very light oils, light oils, medium oils, heavy fuel oils.

TYPES OF OIL

Crude oil is classified based on density;

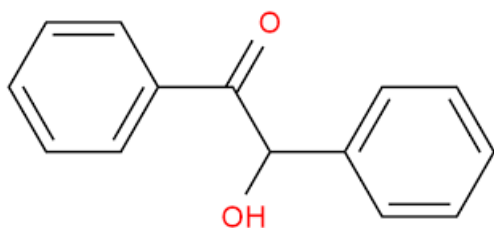
- **Very light oils; Jet fuel, gasoline, kerosene, petroleum ethers, petroleum spirit and petroleum naphtha. They tend to be very volatile, evaporating within a few days which in turn evaporates their taricity levels.**
- **Light liquids; Grade (and grade 2 fuel oils, diesel fuel, most domestic fuel oil. They are both moderately volatile and toxic.**
- **Medium oils; These are the most common types of cruied oil. They have low volatility and high viscosity.**
- **Heavy fuel oils; Grade 3,4,5 and 6 fuel oil along with heavy marine fuels, most viscous and least volatile and highly to toxic.**
- **Plant oil; Derived from plant products eg: Almond oil, avocado oil, coconut oil, olive oil, peanut oil etc.**
- **Animal oil; Derived from animal productis eg: milk fats, rendered fats, fish oils, etc.**

OIL AND CHEMICAL COMPOSITION

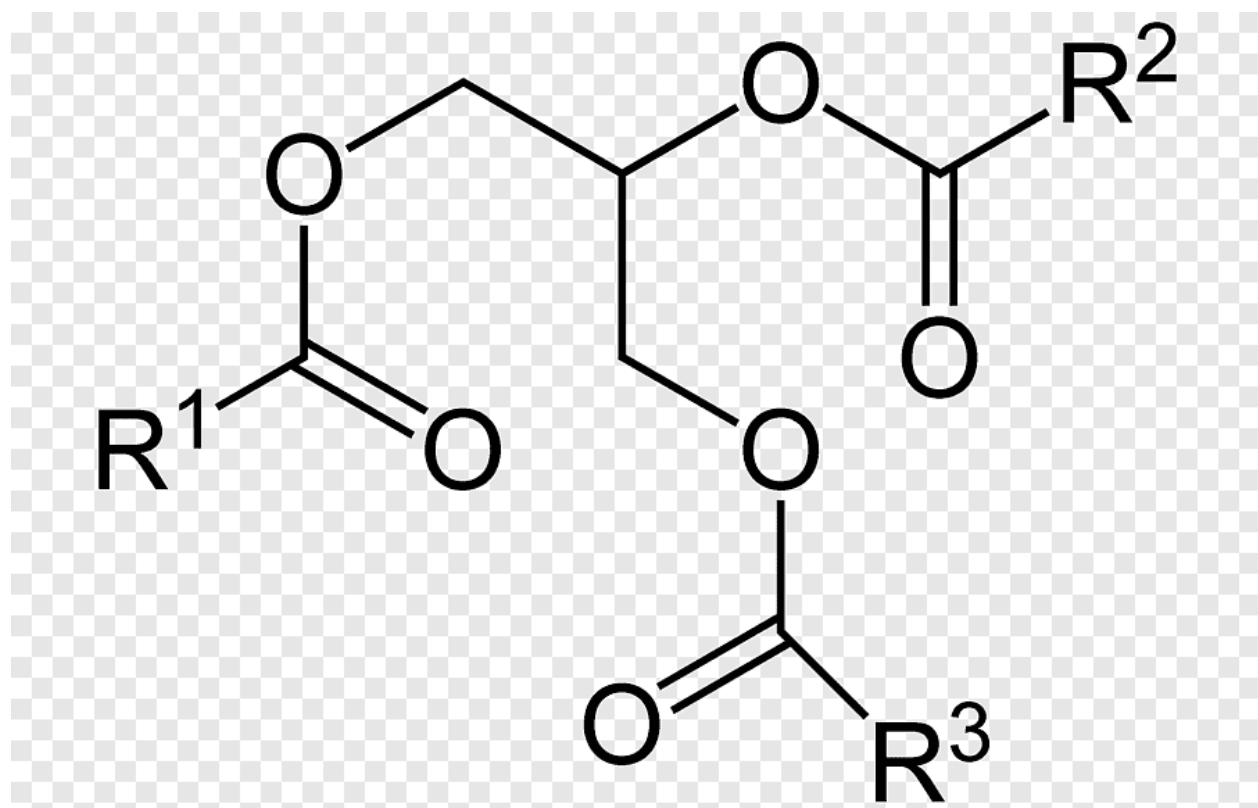
Coconut oil; Is made by pressing fresh or dried coconut meat. Transesterification products with decanoic acid mixed ester with glycerol acitanoate C₃₃H₆₂O₆.



Almond oil; Is made from almonds. Almond oil contains 68% aleic acid (C₁₈:1) , 25% linaletic acid, palmitic acid, palmetabic acid, stearic acid.

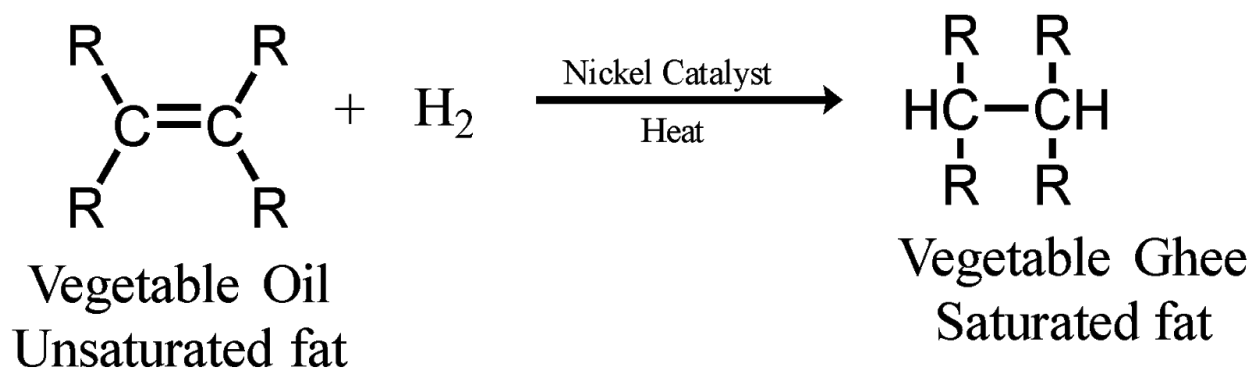


Olive oil; Is extracted from the fleshy part of the ripened fruit of the olive tree, Olea europaea. Molecular formula C₈₈H₁₆₄O₁₀.



VEGETABLE OIL

Vegetable oil is prepared to liquids from solids by hydrogenation reaction with nickel as catalyst



Hydrogenation is a process that reduces unsaturated fatty acids of triglycerides by attaching hydrogen atoms at the point of unsaturation in the presence of a catalyst



ANALYSIS OF OLIVE OIL

Principle:

The test is based on the development of red colour by acetic anhydride in the presence of sulphuric acid when a solution of oil in chloroform is taken (Fetelson test) /

Apparatus;

- Test tubes-150mmX15mm
- Pipette-2ml, graduated to 0.1ml
- Dropper so calculated that 7 drops of oil weigh 0.22 gm
- Water bath maintained at 50C

Reagents:

- Chloroform
- Concentrated Sulphuric acid
- Acetic anhydride
- Diethyl ether, anhydrous peroxide free, stored over sodium

Procedure:

Pipette into a test tube 0.8ml of acetic anhydride, 1.5ml of chloroform and 0.2ml of sulphuric acid. Cool to 50C then add approximately 0.22gm (7 drops) of oil. If any

turbidity appears, add acetic anhydride drop by drop with shaking until the solution becomes clear. Keep at 50C for 5 minutes. Add 10ml of diethyl ether previously cooled to 50C. Stopper the test tube and mix thoroughly by inverting it twice. Return the test tube to the bath at 50C. An intense red colour which develops about a minute after the addition of ether, reaches a maximum and disappears, indicates pure tea seed oil. A less intense colour indicates presence of tea seed oil but caution must be exercised in interpreting results in the presence of olive oil. The test is generally applicable, but some olive oils yield a pink colour and the test is therefore not reliable for the detection of less than 15% of tea seed oil in olive oil.

USES

The use of oil in everyday life is vast .Some major uses of oil are ;

- **Vehicles ; gear oil,brake fluids,tires,fuels,etc**
- **Clothing ; polyethylene,artificialfibre,shoes**
- **Fuels ; diesel,jetfuel,gasoline,etc**
- **Medical ; antiseptics,aspirin,sanitiser,etc**
- **Electronics; cablrs,tv,camera,headsets,etc**
- **Beauty ; nail polish,makeup,facial,shampoo**
- **Sports ; tennisball,surfboards,bicycles,etc**
- **Furniture ; artificial fibres,parasols,rugs,etc**
- **Household ; exterior paints,thermalisolation**
- **Toys ; balloons,dolls,crayons,etc**
- **Office ; printing inks,glue,etc**
- **Agriculture ; propane,lubricant,fertilizers**
- **Accessories ; umbrella,jewelry,luggage,etc**

REPORT SUMMARY

The training provided by the industry was extremely good and interesting. Learned a lot of information and gained a lot of knowledge about their workplace and environment. On this training I learned to analyse the oil samples and their importance to the world. Learned to handle new instruments and equipments . The training involved analysis of teased oil in olive oil . Learned handle the apparatus and chemicals with care and safe . The guide was kind and had a great `hospitality . The exposure was extremely great . The facility provided by the respective was very good . Had a great experience training . This training will be of great value to my future career. Had a great experience during the entire training period .

The end



Government of India
Department of Atomic Energy
BARC Facilities, KARP

Date: 15/12/2021

TO WHOM IT MAY CONCERN

This is to certify that Mr. Thulasi Raman student of SATHYABAMA Institute of Science and Technology has successfully completed internship in the field of Analysis of Various oils from 01.12.2021 to 15.12.2021 under the guidance of me. During the period of his internship program with us he had been exposed to different processes and was found diligent, hardworking and inquisitive.

We wish him very success in his life and career.

R Sathiyaraj
15/12/2021
(Dr. R.Sathiya Narayanan)
Research Supervisor
(Faculty of Science &
Humanities, Chemistry)

Dr. R. SATHIYANARAYANAN Ph.D
SCIENTIFIC OFFICER
KARF/BARCF
DEPARTMENT OF ATOMIC ENERGY
GOVT. OF INDIA KALPAKKAM