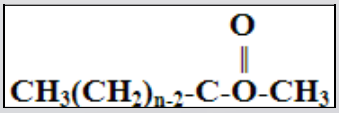
NOVABIOSOURCE FUELS, INC.

BIODIESEL TECHNOLOGY FOR TODAY AND TOMORROW

NOVA Ultra Plus Grade Biodiesel

Technical Data Sheet

Description:



Methyl Esters, saturated and unsaturated
CAS# 68990-52-3; **Formula:** $C_{n-1}H_{2n-1}COOCH_3$
NOVA Ultra Plus Grade Biodiesel is composed primarily of unsaturated Methyl Esters having 16 or 18 carbons; 'n' in the structural diagram above refers to the different carbon chain lengths present, from C6 up to C20. It is a clear liquid under ambient conditions with a musty odor.

Application
NOVA Ultra Plus Grade Biodiesel is intended as a Fuel or Fuel Additive, which meets both EN 14214 and ASTM 6751 specifications for Biodiesel. Beyond these specifications, NOVA Biodiesel have also been manufactured in order to be "fit-for-purpose" in fuel applications.

Physical Properties
Insoluble in water under ambient conditions, but suitable solvents include ethyl ether, and mineral oil.

Specific Gravity:	0.9 @ 25/25°C
Cloud Point:	0-5°C
Cetane Number:	>47
CSFT	<200s

Oil Derivation/Microbial
Nova Ultra Grade Biodiesel is composed of mono-alkyl esters that are manufactured entirely from naturally occurring animal and vegetable fats and oils.

- Preservatives or additives may or may not be present.
- Due to our process conditions, we do not believe that microbiological activities exist within Nova Ultra Plus Grade Biodiesel.

Material Availability
These products are available at the following locations and in the respective containers sizes:

Seneca, IL	Tank wagon or Rail Car
Clinton, IA	Tank wagon or Rail Car

Shelf Life*
Shelf life is affected by how a product is stored. The National Biodiesel Board has conducted or sponsored extensive stability study tests for Biodiesel and suggests a shelf-life of six months. However, this can be significantly increased or decrease based upon individual storage conditions.

Storage and Handling (recommended)*
Storage Temp Targets: 80-100°F (27-38°C)
Handling Temp Min-Max: 80-100°F (27-38°C)
Sensitive Properties: Color
Max Steam, psig: 150
Nitrogen Blanket: No
Load out filter: <10 micron
Rail Car or Tank Truck: Carbon Steel
Agitation/Recirculation: Needed only while heating
Storage Tank: Carbon Steel
Pumps and Lines: Carbon Steel

Material Compatibility*

Recommended	Not Recommended
Telfon	Nitrile
Viton	Buna N
Fluorinated Plastics	Natural Rubber
Nylon	Polyproplylene
Aluminum	Polyethylene
Carbon, Stainless Steel	Lead, Tin, Zinc
Fiberglass (most types)	Copper, Brass, Bronze

Note: Methyl esters attack, swell, and soften many different types of rubber and plastic such as gaskets and hoses. Concrete is slowly swollen and deteriorated by contact.

*"The Biodiesel Handling and Use Guide", published by the National Renewable Energy Laboratory, contains further details and guidelines for the use of Biodiesel. A copy of this guide can be provided by Nova Biosource Fuels for your review.