

## PACK SIZES AVAILABLE

20 LITRES  
200 LITRES  
1000 LITRES  
10,000 LITRES  
20,000 LITRES

## TECHNICAL SUPPORT

Chemiphase will offer on-site technical support during all stages of production. Technical support includes on-site testing and results.

## PRODUCT SAFETY

All Chemiphase products are thoroughly researched and tested. All products are also COSHH registered and come complete with delivery.

For more information on any of our products or services please visit us on the Web at:

[www.chemiphase.co.uk](http://www.chemiphase.co.uk)

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# Allklear 400

## Biodiesel Antioxidant for Storage



### PRODUCT DESCRIPTION

Chemiphase are proud to launch our latest development in biodiesel technology, a biodiesel antioxidant that also contains a biocide.

When biodiesel is made, part of the reaction stage strips the biodiesel of its naturally occurring antioxidants. It is very important at this stage to re-introduce antioxidants to ensure fuel stability and protected against oxidative degradation. Oxidation occurs when contact is made with air or metal surfaces.

Allklear 400 is designed for use when biodiesel is being used and stored for over 1 month. Biodiesel must be stored in suitable tanks where water ingress is not possible or there will be water and then bacteria contaminating biodiesel. Allklear 400 will control the premature oxidation of unsaturated fatty acid esters in biodiesel. And the formation of highly volatile compounds and corrosive carboxylic acids that are well known to form polymerized and cross-linked biodiesel gums that can precipitate and damage all types of diesel engines.

### KEY BENEFITS

- Allklear 400 also contains a dispersant & a powerful biocide to control any microbiological activity during storage.
- Allklear 400 does not have a corrosive action on metals and combusts without residue. It is not a hazardous material and does not require labeling in line with the Regulations on Hazardous Substances.



CHEMIPHASE  
INTERNATIONAL

## PRODUCT RANGE :

### BIODIESEL ADDITIVE'S

#### ALLKLEAR 400

Biodiesel antioxidant to control oxidation levels in biodiesel which can cause degradation and damage to tank storage.

#### BIO-CONTROL 41

Biodiesel biocide to control micro-biological growth in biodiesel.

#### COLDFLOW 350

Pour point additive designed for heavy oils like Rapeseed, Used Cooking Oils etc.

#### PH CORRECT

pH correction agent to control the pH of the biodiesel after the reaction stage.

#### COLDFLOW 402

Pour point additive designed for heavy oils like Palm Oils, Tallow Oils and Yellow Grease.

#### CITRACLEAN

Excellent cleaning detergent for area's where oil staining and greasy floors are a problem.

# Allklear 400

## How biodiesel is made

### MIXING OF METHANOL AND CATALYST

A catalyst, typically sodium hydroxide, is dissolved in methanol (wood alcohol).

### REACTION

The methanol/catalyst mix and oil or fat are added together and heated, producing a reaction called "transesterification," which results in two major products: glycerin and biodiesel. Technically, biodiesel is methyl esters.

### SETTLING

Glycerin is much more dense than biodiesel, and the two can be gravity-separated, with glycerin simply drawn off the bottom of the settling vessel.

### WASH

Biodiesel must be washed with water to remove contaminants. Water is heavier than biodiesel and absorbs the excess methanol, sodium hydroxide and soap suspended in it. After washing and settling, the water can be drained from the bottom of the container. Several wash cycles are generally needed.

### METHANOL RECOVERY

Excess methanol remaining in the biodiesel and glycerin are removed through distillation and recycled for reuse.

### PRODUCT QUALITY AND REGISTRATION

Prior to use as a commercial fuel, the finished biodiesel must be analyzed using sophisticated equipment to ensure it meets ASTM specifications. ASTM was founded as the American Society for Testing and Materials.

### FINAL PRODUCT

The finished biodiesel is shipped to fuel distributors by rail or truck, to be sold as pure biodiesel or blended with petroleum diesel.

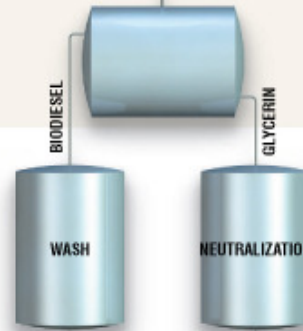


### SOYBEAN OIL

Biodiesel is produced from vegetable oil or animal fat. Most production facilities in Iowa rely on soybean oil. A bushel of soybeans yields 1.4 gallons of biodiesel.

RECOVERED METHANOL

Biodiesel is formed by removing the glycerol molecule from vegetable oil. Once the glycerin is removed from the oil, the remaining molecules are, to a diesel engine, similar to petroleum diesel fuel.



### GLYCERIN NEUTRALIZATION

The glycerin byproduct contains unused catalyst and soaps that are neutralized with an acid. Water and methanol are removed to produce 80 percent to 88 percent pure glycerin, which is ready to be sold as crude glycerin or further refined to pharmaceutical grade.

### GLYCERIN USES

Glycerin has numerous uses: preserving food; as an emulsifier in butter, margarine and mayonnaise; as a base for lotions; in some printing inks; in cake and candy making; as antifreeze; and making clear soaps.

Sources: National Biodiesel Board, Iowa Renewable Fuels Association, Western Iowa Energy

CRAG JOHNSON/THE REGISTER

## Allklear 400 Application

We recommend Allklear 400 is added at the final stage of production of biodiesel. Once the biodiesel has been filtered and washed at this point we recommend adding the Allklear 400. It does not require a great deal of mixing as Allklear 400 contains dispersing agents which decrease mixing times. Simply pour into stream if possible on way to storage tank. Do not add Allklear 400 when biodiesel is still above 50 deg C as this has potential to flash off.

# Allklear 400

## Test Methods :

Pour Point – ASTM D5950 (Deg C)

CFPP – ASTM D6371 (Deg C)

## PACK SIZES AVAILABLE

20 LITRES

200 LITRES

1000 LITRES

10,000 Tanker

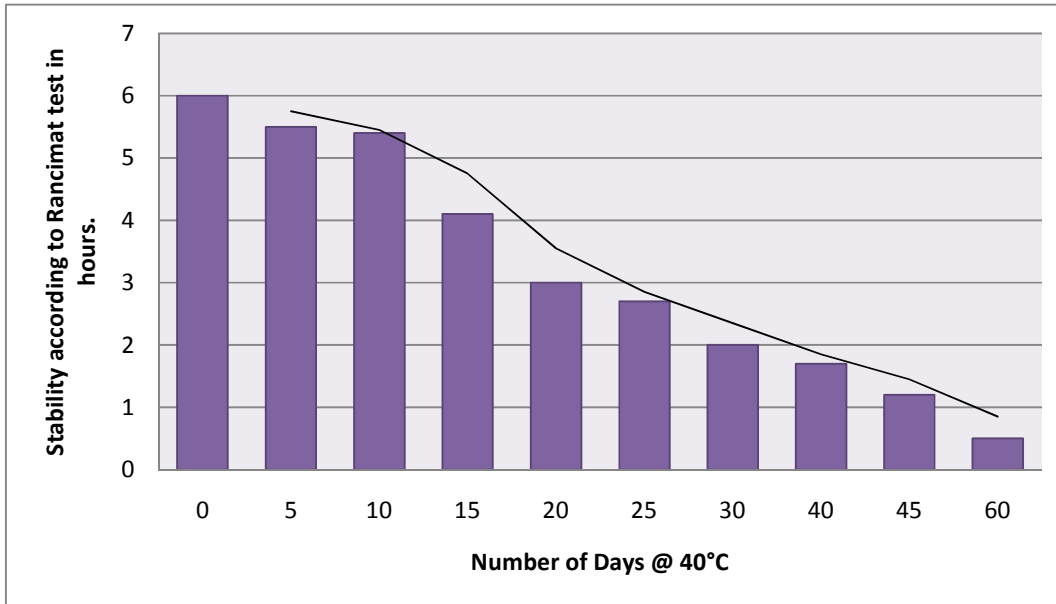
20,000 Tanker

## TECHNICAL SUPPORT

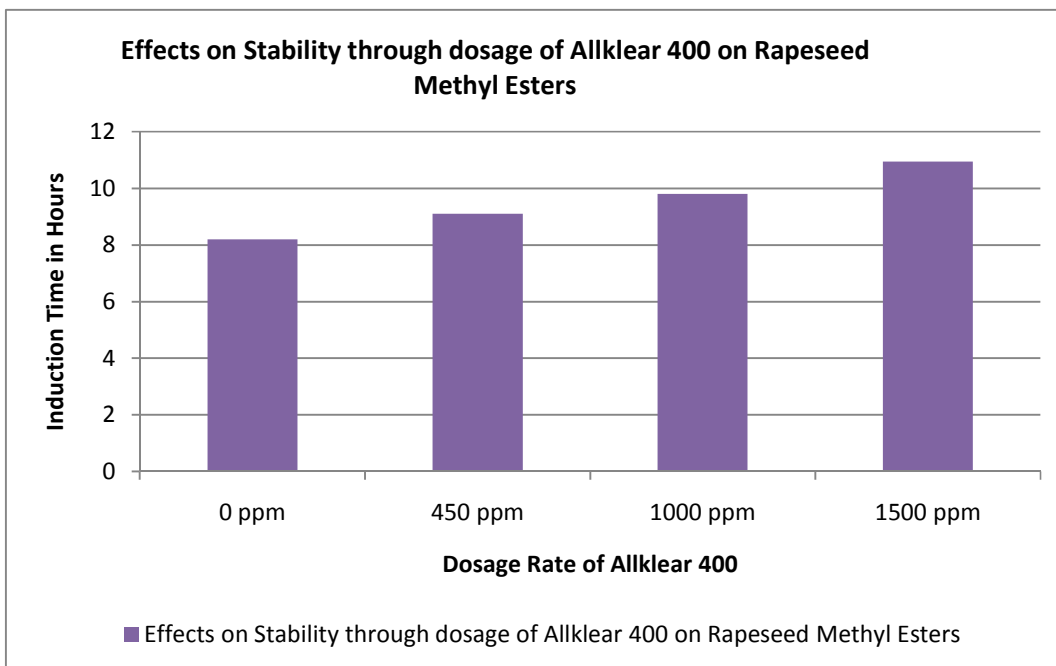
Chemiphase will offer on- site technical support during all stages of production. Technical support includes on site testing.

## DISCLAIMER :

The information and all further technical advice are based on our present knowledge and experience. However, they imply no liability or other legal responsibility on our part, including with regards to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied of guarantee of product properties is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out by qualified experts in the sole responsibility of the customer.



\*This graph shows the ageing process of biodiesel.



\*This graph shows the improvements on the stability of biodiesel made from rapeseed Methyl esters using Allklear 400.

Revision date: November 2006

**CHEMIPHASE LTD**  
**SAFETY DATA SHEET**  
**ALLKlear400**



**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY UNDERTAKING**

**PRODUCT NAME:** ALLKlear 400

**PRODUCT Description:** Biodiesel Additive - **NEW FORMULATION NOVEMBER 2010**

**APPLICATION** BIODIESEL

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**2. COMPOSITION INFORMATION ON INGREDIENTS**

NAME	Einecs No	CAS No	PERCENTAGE BY WEIGHT	CLASSIFICATION
Sodium dodecylbenzene sulphonate		251-55-30-0	2-12%	R22, 38, 41
Methyl Alcohol Carbinol	200-659-6	67-56-1	18-24%	R11,23/24/25

The Full Text for all R- Phrases are displayed in Section 16

**3. HAZARDS IDENTIFICATION**

Main Hazards: Highly flammable. Toxic by inhalation, in contact with skin and if swallowed.  
Toxic danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.  
Other Hazards: In use may form flammable/explosive vapour-air mixture,

**4. FIRST AID MEASURES**

GENERAL INFORMATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INHALATION

Remove exposed person to fresh air if adverse effects are observed. If breathing is laboured administer oxygen. If breathing has stopped, apply artificial respiration. If irritation persists or if toxic symptoms are observed, get medical attention.

INGESTION

DO NOT INDUCE VOMITTING. If conscious, give 2 glasses of water. Get immediate medical attention.

SKIN CONTACT

Wash with soap and water. Remove contaminated clothing. Get medical attention if irritation develops. Launder contaminated clothing before reuse.

EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eyelids. Continue to rinse for at least 15 minutes and get medical attention.

**5. FIRE FIGHTING MEASURES**

EXTINGUISHING MEDIA

Use: CARBON DIOXIDE, Dry chemical powder.

FLASH POINT

FIRE FIGHTING PROCEDURES

Recommend wearing self-contained breathing apparatus. .

UNUSUAL FIRE & EXPOSURE HAZARDS Fire causes formation of toxic gases.

HAZARDOUS DECOMPOSITION PRODUCTS: Fire Creates. Vapours/gases/fumes of carbon dioxide. Sulphur dioxide

## 6. ACCIDENTAL RELEASE MEASURES

### SPILL PROCEDURES

Evacuate all non-essential personnel. Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Remove sources of ignition. Ventilate spill area. Prevent entry into sewers and waterways. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Check under Transportation and Labelling (DOT/CERCLA) and other Regulatory Information Section (SARA) for hazardous substances to determine regulatory reporting requirements for spills.

## 7. HANDLING AND STORAGE

PUMPING TEMPERATURE Not determined. SMOKING is FORBIDDEN, EARTH ANY EQUIPMENT USED IN HANDLING.  
MAXIMUM HANDLING TEMPERATURE Not determined.  
HANDLING PROCEDURES Open container in a well ventilated area. Avoid spillages Avoid breathing vapours. Keep containers closed when not in use. Wash thoroughly after handling. Empty containers retain material residue. Do not cut, weld, braze, solder, drill, grind or expose containers to heat, flames, spark or other sources of ignition.  
MAXIMUM STORAGE TEMPERATURE DO NOT USE container made of steel  
STORAGE PROCEDURES Do not store near potential sources of ignition. Store in well ventilated place.  
LOADING TEMPERATURE

## 8. EXPOSURE CONTROL/PERSONAL PROTECTION

EXPOSURE LIMITS – NO EXPOSURE LIMITS NOTED FOR INGREDIENTS

Name	CAS No.	LONG TERM (8 Hours T.W.A.)	SHORT TERM (15 mins.)
methanol		266mg/m3	333 mg/m3

Not applicable.

- (s) Skin exposure
- (p) Proposed limit
- (c) Ceiling exposure
- (l) Recommended exposure limit
- (u) Supplier recommended exposure limit
- (N/E) – None established

OTHER EXPOSURE LIMITS: RESPIRATORS: No specific recommendations made, but respiratory protection may be required under exceptional circumstances where exceptional air contamination exists.

ENGINEERING CONTROLS: Use local exhaust ventilation to control mists or vapours. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.

HAND PROTECTION: Nitrile

EYE PROTECTION: Safety glasses. If potential for splash or mist exists, wear chemical goggles or faceshield.

RESPIRATORY PROTECTION: Use full face respirator with a combination organic vapour and high efficiency filter cartridge if the recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

### CLOTHING

RECOMMENDATION: Long sleeve shirt is recommended. Wear either a chemical protective suit or apron when potential for contact with material exists. Launder contaminated clothing before reuse.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Flash Point

Upper Flammable % 38.5

Lower Flammable % 4.4

Autoignition Point 385 degC

Vapour Pressure 54.6 kPa@50degC

pH 6-9

Specific Gravity 1.1 (20 °C)

Relative Density 0.790

Water Solubility soluble

Percent Solid Not Determined

Percent Volatile	Unknown
Percent VOC	Not Determined
Vapour Density	Not Determined
Evaporation Rate	Not Determined
Colour	Amber
Appearance	Amber coloured liquid
Viscosity	
Odour Threshold	Unknown
Boiling Point	64-66 degC
Pour Point Temperature	Not Determined
Melting/freezing Point	Not Determined

*The above data are typical values and do not constitute a specification*

## 10. STABILITY AND REACTIVITY

STABILITY	Material is normally stable at moderately elevated temperatures and pressures.
DECOMPOSITION TEMPERATURE	Not Determined avoid heat
INCOMPATIBILITY	Strong oxidising agents/strong acids metals-magnesium/sodium
THERMAL DECOMPOSITION	Sulphuric acid, Sulphur oxide, carbon dioxide and other products of incomplete combustion.

## 11. TOXICOLOGICAL INFORMATION

### -ACUTE EXPOSURE-

EYE IRRITATION	Weak to moderate eye irritant. Does not meet EU R36 criteria. Based on data from components and similar materials.
SKIN IRRITATION	May cause skin irritation, based on data from components or similar materials. Not expected to meet EU R38 criteria. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.
RESPIRATORY IRRITATION	Nose, throat and lung irritant. Based on data from components or similar materials.
DERMAL TOXICITY	No specific health warnings noted
INHALATION TOXICITY	No specific health warnings noted
ACUTE TOXICITY	ORL RAT LC50 5620 MG/KG
DERMAL SENSITISATION	No data available to indicate product or components may be a skin sensitiser.
INHALATION SENSITISATION	No data available to indicate product or components may be respiratory sensitiser.

## 12. ECOLOGICAL INFORMATION

### -ENVIRONMENTAL TOXICITY-

DEGRADABILITY:	BIODEGRADABLE
FRESHWATER FISH TOXICITY	not Determined
FRESHWATER INVERTEBRATES TOXICITY	Not Determined.
ALGAE TOXICITY	Not Determined.
SALTWATER FISH TOXICITY	Not Determined.
SALTWATER INVERTEBRATES TOXICITY	Not Determined.
BACTERIA TOXICITY	toxic to aquatic organisms. Toxic to fauna
MISCELLANEOUS TOXICITY	Not Determined.

## 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL	This material, if discarded, Dispose of in accordance with local authority requirements
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## 14. TRANSPORT INFORMATION

Harmonised Code	290511 (Methanol / Methyl Alcohol)
ICAO/IATA (International)	Not regulated
PACKAGING GROUP	II



USCG Compatability	Not determined
ADR/RID	CLASS 3 FTI
ADR/RID Hazard ID No.	336
UN no	1230

*Review classification requirements before shipping materials at elevated temperatures*

## 15. REGULATORY INFORMATION

SYMBOL(s)	Highly Flammable/toxic
INDICATION OF DANGER	toxic
PRECAUTIONARY LABELS	
EEC EINECS	200-659-6

RELEVANT R PHRASES	R11 – Highly flammable R23/24/25 – Toxic by inhalation, in contact with skin and if swallowed. R39/23/24/25: - Toxic, danger of very serious irreversible effects through inhalation, contact with skin and if swallowed.
	S-36/37/39- Wear suitable protective clothing gloves and eye/face protection S38: - In case of poor ventilation wear suitable respiratory equipment S45: - In case of accident or if you feel unwell, seek medical advice immediately S63: - In case of accident by inhalation remove casualty to fresh air and keep at rest.

UK REGULATORY REFERENCES  
Approved Supply List

STATUTORY INSTRUMENTS  
Chemicals (Hazard Information and Packaging) Regulations  
APPROVED CODE OF PRACTICE  
Classification and Labelling of Substances and Preparations Dangerous for Supply. Safety Data Sheets for Substances and Preparations.

GUIDANCE NOTES  
Occupational Exposure Limits EH40. Approved guide to the classification and labelling of substances and preparations dangerous for supply.

## 16. OTHER INFORMATION

REVISION COMMENTS  
General revision

ISSUED BY  
CES

REVISION DATE                      MARCH 2015

REVISED SDS GENERATED        NOVEMBER 2010

### DISCLAIMER

The information provided in this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.