

### TECHNICAL DATA SHEET

## SANTOLIGHT SL-5262 OPTICAL FLUID

*For photonics and optics*

**High Refractive Index: 1.62**  
**Optically clear: Visible to NIR**  
**Radiation resistant, low viscosity, non-toxic**  
**Low volatility**

#### PRELIMINARY DATA

SANTOLIGHT SL-5262 is a chemically inert optical grade fluid designed especially for sensitive optical assemblies. SANTOLIGHT SL-5262 offers a service temperature range of -40°C (-40°F) to +150°C (+302°F).

#### APPLICATIONS

- ◆ Wafer level optical metrology
- ◆ Index matching to polyimide waveguides
- ◆ Coolant/optical fluid for high power laser optics
- ◆ Non-toxic, high index microscope immersion fluid
- ◆ Radiation-resistant optical fluid for medical and nuclear devices
- ◆ Optical coupling between flat panel display elements
- ◆ Gap coupling between prisms and gratings
- ◆ Thermally compensated fluid lenses
- ◆ Projection display components
- ◆ Solar cell efficiency enhancer

#### TYPICAL PHYSICAL AND PERFORMANCE PROPERTIES

Property (at 25°C unless noted)	Test Method	Typical Value
<b>Mechanical Properties</b>		
Viscosity	ASTM D 1084	650 cP
Specific Gravity	ASTM D 1217	1.18
<b>Thermal Properties</b>		
Glass Transition	TMA/DSC	-30°C (Estimate)
Pour Point	ASTM D 97	-10°C
Thermal Expansion by Volume	ASTM D 1903	$5.3 \times 10^{-4}$ cc/cc/°C
Thermal Conductivity	ASTM C 177	0.13 Watt/(meter-°C)
Evaporation Rate (24hrs, 100°C)	ASTM D 972	0.1%, est.
TGA Take-off, 1% mass loss	TGA	200°C, est.
<b>Electro-optical Properties</b>		
Appearance	Visual	Crystal clear, yellow tint
Ionics (K, Na, P, Ag, Cu, Sn)	ICP	< 10 ppm, each, est.
Volume Resistivity	ASTM D 257	$> 10^{15}$ ohm-cm, est.
Refractive Index, 589 nm	ASTM D 1218	1.62
Refractive Index vs. Temp., 589 nm	ASTM D 1218	$-4.2 \times 10^{-4}/°C$
Refractive Index vs. Wavelength	Prism coupler	(See chart)
Optical Absorption	Spectrophotometer	(See chart)
Particle Contamination	MIL-STD-1246C	Level 25, est.

### PRODUCT ATTRIBUTES

Property	Benefit
Refractive Index = 1.62	Allows index matching to high index plastics, glasses, semiconductors.
Low Viscosity Fluid	Allows rapid dispensing into large assemblies.
Chemically Inert	Non-toxic, compatible with optical grade materials.
Optically Clear	Efficient optical transmission for wavelengths > 430 nm.
High Surface Tension	Non-migrating in thin-film.
Low Volatility	Eliminates re-condensation, contamination, and ensures long service life.
High Purity Composition	Low ionics ensure no degradation of sensitive semiconductors and metals.
Broad Temperature Service	Suitable for use in outdoor environments

### DEAERATION

If air bubbles become entrapped in the dispensed fluid volume during the dispensing process, the assembly should self-de-aerate as long as no pockets of air are trapped beneath mechanical parts. If accelerated de-aeration is required, the assembly may be vacuum de-aerated using a vacuum pressure of approximately 635 mm of Hg (25 inches of Hg), or greater. Apply the vacuum while observing fluid for the presence of bubble formation and increase vacuum slowly to avoid rapid foaming. Hold vacuum until air bubbles are no longer visible.

### OPTICAL MATERIAL COMPATIBILITY

SANTOLIGHT SL-5262 is inert and compatible with most optical glasses, and semiconductors. Substrates to avoid include ester vulnerable plastics, such as polystyrene and ABS. Some seal materials such as butyl rubber may show swelling when in contact with SANTOLIGHT SL-5262 for extended periods at temperatures in excess of 100°C. Contact SANTOLIGHT for engineering guidance.

### SUBSTRATE PREPARATION

Substrates should be free of dust, oil, and fingerprint soils. Clean substrates using suitable industrial techniques for cleaning electro-optics. If hydrocarbon solvent cleaning (or acetone) is used, a final rinse with reagent grade isopropanol is recommended. If aqueous detergent cleaning is used, multiple final rinses with de-ionized water or a single rinse with reagent grade isopropanol is recommended. Always use suitable lint-free wipes when cleaning sensitive optical substrates, lenses, cover glasses, coatings, and other optical materials.

### CLEAN-UP

SANTOLIGHT SL-5262 may be removed from surfaces by first wiping off excess fluid with a suitable paper or cloth wipe and then using soap and water, or alternatively by wiping with a suitable cloth soaked with acetone. If acetone residues are undesirable, the clean-up process should be completed with a final rinse with reagent grade isopropanol. The user is responsible for compliance with all applicable local, state, and federal regulations governing disposal of waste materials as indicated in the MSDS.

### SPECIFICATIONS

Typical properties quoted on this product data sheet must not be used as a basis for preparation of product specifications. Consult SANTOLIGHT for assistance in establishing specification limits and test conditions.

### SHELF LIFE

SANTOLIGHT SL-5262 is an inert fluid with no intrinsic shelf life limitations. It will, however, suffer changes in properties if removed from its original container and subjected to environmental conditions, as indicated in the typical properties table on page 1. This will tend to cause volatilization or thermo-oxidative breakdown, or alternatively through contamination with dust, dirt, or other solids and fluids.

### WARRANTY

SANTOLIGHT SL-5262 is sold without warranty, express or implied. SANTOLIGHT expressly disclaims any liability for incidental or consequential damages resulting from the use of this product. The user is counseled to conduct thorough design and qualification studies prior to approval of SANTOLIGHT SL-5262 for any production process or product component.

### SAFETY

Consult the Material Safety Data Sheet (MSDS) for SANTOLIGHT SL-5262 before use. SANTOLIGHT SL-5262 is an industrial product, designed for use only by qualified laboratory or production personnel.

### PACKAGING

For prototyping and small batch sizes in production, SANTOLIGHT recommends:

**30cc (1 fl. oz.) bottle with graduated pipette applicator**

For larger volume usage, SANTOLIGHT offers as a standard package:

**480cc (16 fl. oz.) bottle**

Other container options are also available for use with automated dispensing equipment. Contact SANTOLIGHT for assistance with special packaging, dispensing, or private labeling requirements.

### TO PLACE AN ORDER

Contact SANTOLIGHT Customer Service at:

Tel: 636-723-0240

Fax: 636-723-4210

E-mail: [lubes@santolubes.com](mailto:lubes@santolubes.com)

Website: [www.santolubes.com](http://www.santolubes.com)

### FOR APPLICATIONS SUPPORT

Contact SANTOLIGHT Applications Engineering at:

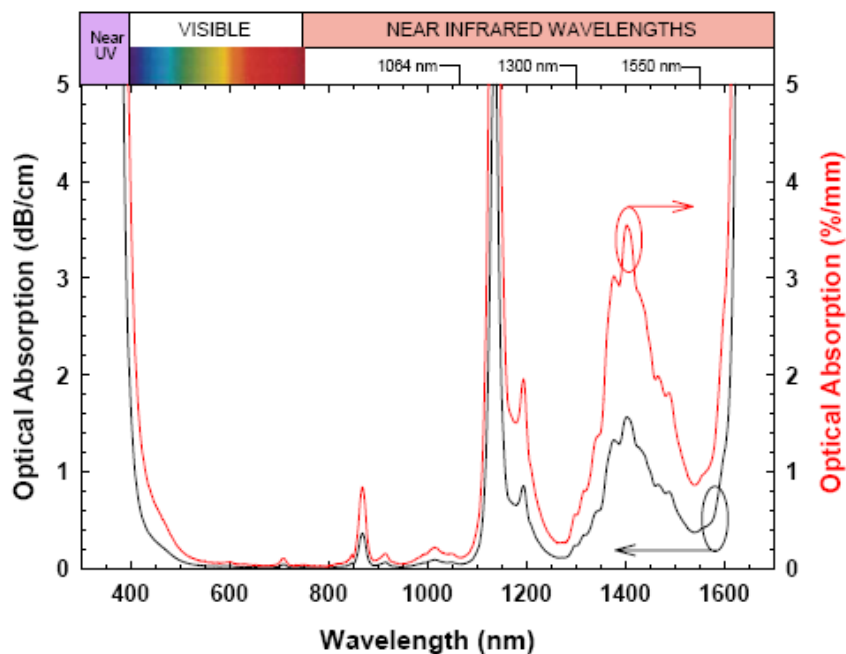
Tel: 508-295-9110

Fax: 508-295-9248

Email: [info@light-span.com](mailto:info@light-span.com)

Web site: [www.light-span.com](http://www.light-span.com)

### Optical Absorption vs. Wavelength SantoLight Optical Fluid SL-5262 Lot# 21126-0417



### Refractive Index vs. Wavelength (25°C) SantoLight Optical Fluid SL-5262 Lot# 21126-0417

