

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : OPTICAL II SUPER FLUID

1. Product and Company Identification

Product name: Optical II Super Fluid
Synonyms: None
Item Numbers: E427-10-000

European Contact Details

Edwards, Manor Royal, Crawley
West Sussex, RH10 9LW, England
E-mail: info@edwardsvacuum.com

General enquiries

UK : +44 (0)1293 528844
France : +(33) 1 47 98 24 01
Germany : +(49) 6420-82-410
Italy : +(39) 0248-4471

US Contact Details

Edwards, Three Highwood Drive, Suite 3-10E,
Highwood Office Park, Tewksbury, MA 01876

General enquiries

+(1) 978-658-5410
Toll Free: 1-800-848-9800

24 h Emergency telephone number:

Chemtrec: 1-800-424-9300

2. Hazards Identification

EMERGENCY OVERVIEW

This is a yellow fluid with a characteristic odour, which in its concentrated (undiluted) form is corrosive to all tissues. Prevent all contact with skin and eyes. Do not inhale vapours. Exposure to fire may liberate toxic gases. For short and long term exposure effects see Section 11 Toxicological data.

Eye Effects: Corrosive. Can damage eyesight/lead to blindness.
Skin Effects: Corrosive. Contact can cause severe burns and may cause allergic skin reactions in very susceptible workers. Irritation may be delayed following contact.
Ingestion/Oral Effects: Corrosive. Can cause burns to mouth/gastrointestinal burns if ingested.
Inhalation Effects: Corrosive. Can cause tracheal/lung damage. The lungs may become irritated, begin to retain fluid and swell (oedema). This condition is harmful and may be fatal.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : OPTICAL II SUPER FLUID

NFPA Hazard codes		HMIS Hazard codes		Rating System
Health	3	Health	3	0 = No Hazard
Flammability	1	Flammability	1	1 = Slight Hazard
Instability	1	Reactivity	1	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

3. Composition/Information on Ingredients

Ingredient	% Weight	CAS No	Hazard class*	Risk phrase*
Potassium Hydroxide	10 - 25	1310-58-3	8	R22, R35
Trisodium Nitrilotriacetate	10 - 25	5064-31-3	7	R22, R36

*Hazard class & Risk phrase. These columns are only completed for ingredients which are classified as hazardous under EU Directive No 1272/2008 (as amended) and are present in sufficient concentration to make the overall substance hazardous. In all other situations, the column will be completed as "Not applicable".

4. First Aid Measures

- Eyes:** Keep eyes wide open and immediately flush with soft, clean water for at least 15 minutes. Seek immediate medical attention and ophthalmologic consultation.
- Skin:** Remove contaminated clothing and immediately wash the skin with soap and water, or a recognised cleaner (DO NOT use solvents or thinners). Continue rinsing for at least 15 minutes. Seek medical attention if the contaminated area is widespread and/or there is damage to the skin.
- Ingestion/Oral:** Consult a doctor and show him the product label. Do not induce vomiting or attempt to neutralize.
- Inhalation:** Remove to fresh air. If breathing problems occur, a qualified individual should administer oxygen or artificial respiration as indicated. Seek immediate medical attention.
- Other Information:** None.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : OPTICAL II SUPER FLUID

5. Fire Fighting Measures

Extinguishing Media:	Carbon dioxide, foam or dry powder.
Fire and Explosion Hazard:	Exposure to fire may liberate toxic gases. Product is not flammable or combustible.
Special Protective Equipment for Fire Fighters:	Fire fighters should wear a self-contained breathing apparatus (SCBA) which meets appropriate standards operated in positive pressure mode, and full turnout gear. Wear skin protection adequate to protect against contact with the product.

For Flammability Properties - see Section 9.

6. Accidental Release Measures

Avoid discharge of fluid into the environment. Keep untreated fluid out of drains, sewers and water courses. Prevent contact with skin and eyes. Wear personal protective equipment (see Section 8). Wipe small spills with cloth and place in separate waste container for later disposal. Contain and control larger spills with non-combustible absorbent materials such as sand, earth, vermiculite or diatomaceous earth in drums for waste disposal. Clean the area of the spill with plenty of water. Dispose as described in Section 13.

7. Handling and Storage

Handling:	Keep containers tightly closed. Prevent contact with skin and eyes. Use only with adequate ventilation.
Storage:	Store in its original container * in a dry, cool well-ventilated area, at a temperature between 5 °C and 40 °C/41 °F and 104 °F.
	(* Other appropriate packaging: polyethylene container.)

8. Exposure Controls/Personal Protection

Exposure Limits:

Ingredient	ACGIH - TLV -	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
KOH (potassium hydroxide)	2 mg m ³	NIOSH REL 2 mg m ³	2 mg m ³

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : OPTICAL II SUPER FLUID

Personal Protection:

Engineering Measures: General ventilation is required.

Respiratory Protection: Avoid breathing vapour or spray. In case of insufficient ventilation, wear suitable respiratory equipment.

Hand/Skin Protection: Wear suitable impervious gloves. Wear suitable protective clothing where there is the possibility of splashing. These items must be kept in good condition and cleaned after use.
Protective creams may be used for exposed skin, but they should not be applied after contact with the product.

Eye/Face Protection: Wear face shield/goggles/safety glasses where there is the possibility of splashing. Provide eye washes in workshops where the product is constantly handled.

Hygiene Measures: Practice good workplace hygiene. Do not eat or smoke when handling. Wash hands after handling and before eating. Any clothing that does not provide chemical protection should be changed promptly following splashes, spills, or other contamination.

Other/General Protection: None.

9. Physical and Chemical Properties

Appearance and Odour	Yellow fluid with a characteristic odour	Boiling point	No data available	°C/°F
pH dil. (1%) at 25 °C/77 °F	13.8	Freezing Point	No data available	°C/°F
Solubility in Water	100%	Auto Ignition	Not flammable	°C/°F
Volatile Content by Volume	No data available	Flash Point	Not flammable	°C/°F
Specific Gravity	1.38			
Vapour Pressure (mbar)	No data available	Vapour Pressure (Torr)	No data available	

10. Stability and Reactivity

Stability: Stable in normal conditions.

Material/Conditions to Avoid: Do not open a product package when it is under pressure.

Hazardous Decomposition: Exposure to fire may liberate toxic gases.

Hazardous Polymerisation: Will not polymerise.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : OPTICAL II SUPER FLUID

11. Toxicological Information

For a comprehensive description for the various toxicological (health) effects which may arise if the user comes into contact with the substance or preparation refer to Section 2 Hazards Identification.

Animal data:

LD50 value: No data available.

LC50 value: No data available.

It is generally agreed that substances contained are likely to cause tissue damage in less than three minutes after application to the healthy, unbroken skin of an animal.

Carcinogenicity:

No data available.

12. Ecological Information

No ecological data on the product itself is available.

13. Disposal Considerations

Dispose of in accordance with local and national regulations. Do not pour into drains or sewers. Do not contaminate the ground or water with waste. Do not dispose of waste into the environment.

Diluted solutions can be sent to a water treatment plant after neutralization (pH 6 to 9). Concentrated solutions must be treated as special waste.

Empty soiled containers completely. Keep label(s) on container and give to a certified disposal contractor.

The above information applies to the pure uncontaminated fluid only!

14. Transport Information

This product is classified as dangerous under transport regulations.

PARAMETER	EUROPEAN	CANADIAN TDG	UNITED STATES DOT
Proper Shipping Name	Corrosive Liquid, Basic Inorganic N.O.S. (Potassium Hydroxide)	Corrosive Liquid, Basic Inorganic N.O.S. (Potassium Hydroxide)	Corrosive Liquid, Basic Inorganic N.O.S. (Potassium Hydroxide)
Hazard Class	8	8	8
Identification Number	UN 3266	UN 3266	UN 3266
Shipping Label	Corrosive	Corrosive	Corrosive

Packing group III

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : OPTICAL II SUPER FLUID

15. Regulatory Information

European Regulatory Information

This product has been classified in accordance with EU Regulation No 1272/2008 (as amended) on the Classification, Labelling and Packaging of Substances and Mixtures.

Classified as dangerous to supply : Yes.

Risk Phrases :	R22	Harmful if swallowed.
	R35	Causes severe burns.
	R36	Irritating to eyes.
Safety Phrases :	S1/2	Keep locked up and out of reach of children.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S27	Take off immediately all contaminated clothing.
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Symbols : C (corrosive).

United States Regulatory Information

All materials contained in this product are listed on the U.S. Toxic Substances Control Act (TSCA).

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product does not contain toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and 40 CFR Part 372.

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Canadian Regulatory Information

WHMIS Classification: E.

All ingredients in this product are included in the Canadian DSL.

Canadian Controlled Products Regulations (CPR): This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Other Regulatory Information

Officially recognised numbers: RTECS #: TT2100000 ; Switzerland OFSP/BAG No. : 681042;

Germany UBA Number : 11950099.

Swiss toxic class: 2.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : OPTICAL II SUPER FLUID

16. Other Information

This MSDS is compiled in accordance with ANSI Z400.1 and Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Sources of information for this data sheet:

- NGL Cleaning Technology Optical II Super Safety Data Sheet, Version No 1 (09/06/2009),
Revision: No 1 (09/06/2009).

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists; ANSI - American National Standards Institute; Canadian TDG - Canadian Transportation of Dangerous Goods; CAS - Chemical Abstracts Service; CFR - Code of Federal Regulations; Chemtrec - Chemical Transportation Emergency Center (US); CPR - Canadian Controlled Products Regulations; DSL - Domestic Substances List; EH40 (UK) - HSE Guidance Note EH40 Occupational exposure limits; EINECS - European Inventory of Existing Commercial Chemical Substances; EPCRA - Emergency Planning and Community Right-to-Know Act; HMIS - Hazardous Material Information Service; LC - Lethal Concentration; LD - Lethal Dose; MSDS - Material Safety Data Sheet; NFPA - National Fire Protection Association; OECD - Office of Environmental Compliance and Documentation; OFSP/BAG - Office Federal de la Sante Publique/Bundesamt für Gesundheit (Federal Office of Public Health); OSHA - Occupational Safety and Health Administration, US department of Labour; PEL - Permissible exposure limit; RTECS - Registry of Toxic Effects of Chemical Substances; SARA (Title III) - Superfund Amendments and Reauthorization Act; SARA 313 - Superfund Amendments and Reauthorization Act, Section 313; TLV - threshold limit value; TSCA - Toxic Substances Control Act Public Law 94-469; WHMIS - Workplace Hazardous Materials Information System; UBA - Umweltbundesamt (German Federal Environment Agency); US DOT - US Department of Transportation; WGK - Wassergefährdungsklasse (German Water Hazard Classification); WHMIS - Workplace Hazardous Materials Information System.

Revisions:

Aug 2010 - Data Sheet updated to reflect the latest regulatory and supplier safety information.

May 2011 - Data Sheet updated to ensure consistency of terminology.

Although the information and recommendations in this data sheet are to the best of our knowledge correct, it is recommended that you make your own determination of the material's suitability for your purpose before you use it. The information contained in this data sheet has been reproduced from the manufacturers data; the accuracy of this information is the responsibility of the manufacturer. Edwards accept no responsibility for damage of any nature resulting from the use of, or the reliance upon, this data sheet.