

MATERIAL SAFETY DATA SHEET (MSDS)

E-WIPE®; & ECLIPSE®;

Section I Chemical Product & Company Identification Preparation Information : This MSDS was prepared by David M. Stone, President, PHOTOGRAPHIC SOLUTIONS, INC.

date prepared : 03 Jan 2006

Product Identifier : Eclipse®; Optic Cleaner or e-Wipe®; Critical Optic Cleaner

Manufactured by : PHOTOGRAPHIC SOLUTIONS, INC.

7 Granston Way

Buzzards Bay, MA 02532-4914

Emergency Phone : CHEMTREC (800) 424-9300 24 hours / 7 days

Product Use :

Eclipse is intended for cleaning optical lenses such as those used in photography, binoculars, telescopes, etc. It is applied by dropping a few drops onto a clean PEC*PAD®; and wiping across the surface of the glass.

e-Wipe is intended for cleaning critical optic CCD's, mirrors and lenses such as those used in digital camera and photographic equipment, binoculars, telescopes, etc. It is applied by opening the sealed packet and gently wiping in a single direction across the surface.

Section II Composition and Ingredient Information

Chemical Identity : 100% Methanol - CAS # 67-56-1

Section III Hazards Identification

FLAMMABLE LIQUID - Product can burn with no visible flame.

Eye : Exposure may cause eye irritation. Symptoms may include stinging, tearing and redness and swelling.

Skin : Exposure may cause mild skin irritation. Prolonged or repeated exposure may dry the skin. Symptoms may include redness, burning, drying & cracking, and skin burns. Skin absorption is possible and may contribute to symptoms of toxicity from other routes of exposure.

Swallowing : Single dose oral toxicity is moderate. Swallowing may be harmful.

Inhalation : Exposure to vapor or mist is possible. Short-term inhalation toxicity is low. Breathing small amounts during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are more likely to occur at concentrations which exceed recommended exposure limits.

Symptoms of Exposure (through breathing, swallowing and/or passage through the skin) : gastrointestinal irritation (nausea, vomiting, diarrhea) , irritation (nose throat, respiratory tract), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), leg cramps, abdominal & low back pain, blurred vision, shortness of breath, cyanosis (bluish discoloration of the skin & nails), visual impairment (including blindness), coma and death.

Target Organ Effects : Exposure to lethal concentrations of methanol has been shown to cause damage to organs, including livers, kidneys, pancreas, heart, lungs and brain. Although this rarely occurs, survivors of severe intoxication may suffer from permanent neurological damage. Overexposure to this material or its components has been suggested as a cause of the following effects in laboratory animals, and may aggravate pre-existing disorders of these organs in humans : central nervous system damage. Overexposure to this material or its components has been suggested as a cause of the following effects in humans may aggravate pre-existing disorders of these organs: visual impairment, eye damage

Developmental information : While there is sufficient evidence that methanol causes birth defects in experimental animals, the relevance of these finding to humans is uncertain because of differences in metabolism and toxicity of methanol between humans & non-primates.

Cancer information : no data

Other health effects : no data

Primary Routes of Entry : inhalation, skin absorption, skin contact, eye contact, ingestion

Section IV First Aid Measures

Inhalation : If symptoms develop, move person away from exposure and into fresh air. If breathing is difficult, administer oxygen. Keep person warm and quiet. Seek immediate medical attention.

Skin contact : Wash skin with soap and water. Remove contaminated clothing. Wash clothing before re-use. Get medical attention if symptoms persist.

Eye contact : Remove person from exposure and into fresh air. If easy to do, remove contact lenses. Flush eyes gently with water while holding eyelids apart for at least 15 minutes. Get medical attention.

Swallowing : Seek immediate medical attention. If person is drowsy or unconscious, do not give anything by mouth, place person on their left side with head down. If person is conscious and alert, induce vomiting by giving person syrup if ipecac or by gently placing two fingers at the back of their throat. If possible, do not leave person unattended.

NOTE TO PHYSICIANS : This product contains Methanol which can cause intoxication and central nervous system depression. Methanol is metabolized to formic acid and formaldehyde. These metabolites can cause metabolic acidosis, visual disturbances, and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6-30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used to prevent methanol metabolism. Ethanol administration is indicated in symptomatic patients or at blood methanol concentrations above 20ug/dl. Methanol is effectively removed by hemodialysis.

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: lung (for example, asthma like conditions), liver, kidney, central nervous system, pancreas, heart. Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemia's.

Section V Fire Fighting Measures

Flash point : 54o F (12.2 o C) TCC

Explosive Limit : Lower 6% Upper 36%

Auto-ignition Temperature : 725 oF (385 oC)

Hazardous combustion products : Carbon monoxide (CO) and Carbon Dioxide (CO₂), various hydrocarbons

Fire & Explosion Hazards : Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge, or other ignition sources at locations distant from the material handling point. Use extreme care when approaching an area if fire is suspected or known - this product may burn with no visible flame. Even product residue can ignite explosively.

Extinguishing Media : water fog, carbon dioxide, dry chemical

Fire Fighting Instructions : Water may be ineffective in fire-fighting but may be used to keep fire exposed containers cool until the fire is out. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Refer to section VIII of this MSDS.

NFPA Hazard Rating : Health 1; Flammability - 3; Chemical Reactivity - 0
Personal Protection - C

Section VI Accidental Release Measures

Absorb liquid on vermiculite, floor absorbent or other similar material and transfer to hood. Eliminate all ignition sources such as flares, flames (including pilot lights), and electrical sparks.

Section VII Handling & Storage

Handling procedures & equipment : Containers of this product should be treated with the same precautions whether full or empty, as empty containers may still contain vapors and/or liquid.

Storage requirements : Store away from heat and/or ignition sources, open flames, etc. For added safety, a storage cabinet specifically designed for flammable liquids should be utilized.

Aluminum may form an oxide scale on prolonged contact.

Section VIII Exposure Controls & Personal Protection

NFPA Hazard Rating : Personal Protection - C

Respiratory protection : a NIOSH/MSHA approved air supplied respirator in absence of proper air control and/or ventilation for organic solvents should be used if airborne concentrations cannot be maintained below recommended limits of 160ppm. Eye protection : wear safety goggles with side shields. Skin protection : gloves should be worn for prolonged or repeated contact. Recommended decontamination facilities : eye bath and washing facilities.

Engineering Controls : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below threshold limit values (TLV).

Exposure Limits : Methyl Alcohol CAS # 67-56-1

OSHA VPEL 200ppm - TWA Skin

OSHA VPEL 250ppm - STEL Skin

ACGIH TLV 200ppm - TWA Skin

ACGIH TLV 250ppm - STEL Skin

Section IX Physical & Chemical Properties

- 1) Physical form & color : a homogeneous, colorless liquid at room temperature
- 2) Odor & Odor threshold : 160 ppm
- 3) Specific Gravity at 68oF : .795 (water = 1)
- 4) Vapor Pressure at 68oF (mm Hg) = 97.0
- 5) Vapor Density : 1.11 (air=1)
- 6) Evaporation rate : 2.1 (Butyl acetate=1)
- 7) Percent volatiles = 100%
- 8) Liquid Density = 6.65 lbs/gal @ 60 o F (.800 Kg/L @ 15.5o C)
- 9) Boiling Point = 149 o F (65 o C) @ 760mm Hg
- 10) Volatile Organic Compounds (VOC) = 100% 665 lbs/gal 800 gm/L
- 11) Coefficient of water/oil distribution : No oil or water present
- 12) Conditions of flammability : exposure to sparks and open flame
- 13) Means of extinction: CO₂ , foam or dry chemicals
- 14) Flash point : 54.0 oF (12.2oC) using Tag Closed Cup (TCC) method
- 15) Upper flammable limit : 36% volume in air STP
- 16) Lower flammable limit : 6% volume in air STP
- 17) Auto Ignition temperature: No Data
- 18) Sensitivity to mechanical impact : no data
- 19) Sensitivity to static discharge : no data
- 20) Solubility in water : readily soluble

Section X Stability & Reactivity

- 1) Conditions under which the product is chemically unstable : none.
- 2) Incompatibility : Strong oxidizing agents, strong acids, reactive metals such as Aluminum & Magnesium
- 3) Conditions of reactivity : on exposure to strong oxidizing agents
- 4) Hazardous decomposition products : carbon dioxide (CO₂), carbon monoxide (CO), various hydrocarbons
- 5) Hazardous polymerization : will not occur

Section XI Toxicological Information

SKIN : Dermal LD50 (rabbit) 20 ml / kg [2]

INHALATION : Dermal LC50 (cat) 65,700 ppm / 4 ½ H [2]

Dermal LC50 (cat) 64,000 ppm / 4 H [5]

INGESTION Oral LD50 (dog) 8-9 g / kg [1]

(non-primate) Oral LD50 (rabbit) 7-9 g / kg [1]

Oral LD50 (rabbit) 14.4 g / kg [2]

Oral LD50 (rat) 6.2-13 g / kg [2]

Oral LD50 (mouse) 7-10 g / kg [1]

NOTE: These doses are 6 - 10 times the lethal dose of methanol.

INGESTION Minimum lethal oral dose (monkeys) 2 - 3 g / kg [1]
(primate) Nearly 100% lethality - oral dose (monkeys) >3 g / kg [1]
Minimum lethal oral dose (humans) .3 - 1 g / kg [1]
Oral Lethal dose (humans) .8 - 1.5 g / kg [2]
Oral Lethal dose (humans) 2-8 oz. [3]

ECOTOXICITY LC50 Pimephales promelas (fathead minnow) 29.4 g / l / 96 H
(28-29 days old) [4]

[1] Snyder, R., series editor; Thurman, R.G. & Kauffman, F.C. eds. (1992) : Ethyl Browning's Toxicity and Metabolism of Industrial Solvents, 2nd ed., Vol. III , Alcohols and Esters, Amsterdam Elsevier, pgs 3-20.

[2] Clayton, G.D. and Clayton F.E. (1981). Patty;s Industrial Hygiene and Toxicology, 3rd. edition, John Wiley & Sons, Inc.

[3] Gosselin, R E, Hodge, H.C., Smith, R.P., and Gleason, M.N. (1976). Clinical Toxicology of Commercial Products, 4th edition, The Williams and Wilkins Co., Baltimore.

[4] HSDB Micromedex Inc., Volume 29 , 8/96

[5] RTECS, Micromedex Inc., Volume 29 , 8/96

Section XII Ecological Information

No data.

Section XIII Disposal Considerations

All residual vapors from "empty" container should be allowed to evaporate before discarding. Applicators and/or contaminated absorbent material which contain product in the amounts accumulated during specified usage may be deposited in a landfill in accordance with local, state and federal authorities.

Eclipse contains no chemicals which are classified as F001 or F002 as defined in the EPA Hazardous Waste list, July 1 1995 Edition of 40CFR Chapter 1, Section 261.31.

Section XIV Transportation Information

DOT : Not Regulated in containers not to exceed 448ml (16 oz.) when packaged according to DOT and/or carrier's requirements for ground/surface transport for Other Regulated Materials, Class D (ORM-D). This product may be shipped via surface (ground) services if properly packaged and marked "CONSUMER COMMODITY ORM-D" via US Postal Service and UPS. Consult these carriers' regulations for packaging requirements and suitability of mailing.

Otherwise :

AIR ID8000 Consumer Commodity packaged, marked and shipped as required for transport as a Consumer Commodity; Packing Group 910, Class 9

OCEAN Flammable Liquid NOS Alcanol Mixture, UN1993

Reportable Quantity (RQ) : 5000 lbs.

Section XV Regulatory Information

This MSDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard 29CFR1910.1200.

OZONE DEPLETING CHEMICALS (CFC'S or HCFC's) : NONE

CARCINOGENICITY : components present in concentrations of 0.1% or more :

Internat'l Agency for Research on Cancer (IARC) : NOT LISTED

Amer. Conference of Governmental Industrial Hygienists (ACGIH) : NOT LISTED

Nat'l Toxicology Program (NTP) : NOT LISTED

Occupational Safety & Health Admin. (OSHA) : NOT LISTED

SARA 302 components : 40CFR355 Appendix A : NONE

Section 311/312 Hazard Class : IMMEDIATE DELAYED FIRE

SARA 313 components : 40CFR372.65 Methanol CAS # 67-56-1

CERCLA and DOT reportable quantities : 40CFR302.4 5000 lb.

US Substance Control Act (TOSCA) : the intentional ingredients are listed.

CALIF. PROPOSITION 65 (The Safe Drinking Water & Toxic Enforcement Act of 1986 :

Materials known to the State to cause cancer : NONE

NJ RTK Label Information : Methyl Alcohol

PA RTK Label Information : Methanol

CANADA WHMIS : a copy of the WHMIS document for this product is available from the manufacturer listed in section I above.

Section XVI Other Information

This product is sold for professional photographic use only. It is not to be used or sold for personal, family or household use. Manufacturer can assume no liability if product is used in any manner inconsistent with its labeling or intent.

The information accumulated herein is believed to be accurate but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable and suitable to their circumstances.

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