



MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

UVOAP1

ADHESION MODIFIER

For use with U.V. Curable Screenprinting Inks

North America:
NOR-COTE INTERNATIONAL, INC.
506 Lafayette Avenue
Crawfordsville, Indiana 47933 USA
Phone: 765-362-9180 (day phone)
MSDS Issuer: EHS Department
Emergency Phone:
CHEMTREC (United States)
800-424-9300

Europe:
NOR-COTE INTERNATIONAL LTD.
Unit 8 Warrior Park
Eagle Close
Chandlers Ford Industrial Estate
Eastleigh, Hampshire
SO53 4NF England
Tel: +44 (0) 23 80270542 (day phone)
Emergency Phone:
CHEMTREC (Outside U.S.)
703-527-3887

Asia:
NOR-COTE INTERNATIONAL PTE. LTD.
Blk 4012 Ang Mo Kio Ave 10
#05-08 Techplace 1,
Singapore 569628
Tel: +65 6291-0898 (day phone)

SECTION 2 INGREDIENTS

INGREDIENT	PERCENT BY WEIGHT	CAS#	EXPOSURE LIMITS	EC #
Tetrahydrofurfuryl Alcohol (THFA)	73-75%	97-99-4	AIHA WEEL: 2 PPM (8-HR TWA)	202-625-6
Photoinitiator	25%	Proprietary	Not established	Proprietary

SECTION 3 HAZARDS IDENTIFICATION

ROUTES OF ENTRY: Dermal, Inhalation, Ingestion

GENERAL HEALTH EFFECTS: Irritant to skin, eyes and respiratory tract. Effects may be delayed for several hours.

ACUTE

- **Skin Contact:** Ingredients are potential irritant to the skin. Repeated or prolonged contact may cause sensitization.
- **Eye Contact:** May cause severe eye irritation. Protect eyes from repeated or prolonged contact.
- **Inhalation:** Harmful if inhaled. DO NOT INHALE VAPORS. Excessive exposure to vapor may cause dizziness, blurred vision, nausea, vomiting or headaches.
- **Ingestion:** May be harmful if ingested.

CHRONIC: Repeated or prolonged exposure to vapors may cause central nervous system depression, and decreased male fertility. Repeated or prolonged dermal contact may cause decreased male fertility. Ingestion may cause developmental effects.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: No data available.

HMIS ® RATING: Health – 2* Flammability - 1 Physical Hazard – 0 PPE – C

EC HAZARD SYMBOLS:  Xi - IRRITANT

EC RISK/SAFETY PHRASES:

R36/37/38 = Irritating to eyes, respiratory system and skin.
R43 = May cause sensitization by skin contact.
S24 = Avoid contact with skin.
S37/S39 = Wear suitable gloves/eye and face protection.

SECTION 4 FIRST AID MEASURES

SKIN CONTACT: Remove and isolate contaminated clothing and shoes. Remove excess material from skin with clean cloth. Flush skin with running lukewarm water. Wash affected areas using mild soap.

EYE CONTACT: Flush the eye and under lids with warm water for 15 minutes. Remove any contact lenses during the flushing. Get immediate medical attention if symptoms persist.

INHALATION: Move subject to fresh air and keep warm. If subject is not breathing, administer artificial respiration. If breathing is difficult, have qualified personnel administer oxygen and get medical attention.

INGESTION: If appreciable quantities are swallowed, seek immediate medical attention. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURES



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FLASHPOINT: Not measured but estimated to be >200° F (> 93.3°C) based upon raw material data.

FLAMMABLE/EXPLOSIVE LIMITS (Volume % in air): Not established

EXTINGUISHING METHOD: Water fog, carbon dioxide (CO₂) or dry chemical

AUTO-IGNITION TEMPERATURE: Not established

Evacuate area of all non-emergency personnel. Fire fighters must wear full emergency equipment with self-contained breathing apparatus. At elevated temperatures hazardous polymerization may occur causing container rupture and in extreme cases, explosion. Fight fires from upwind and cool intact containers with water spray or stream at maximum range.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Remove all sources of ignition and ventilate area. Avoid skin and eye contact. Use respiratory protection. Absorb with inert materials such as dry clay or sand and place in closed container for disposal as solid waste in accordance with all applicable regulations.

SECTION 7 HANDLING AND STORAGE

HANDLING: Avoid any unnecessary contact. Use protective clothing specified in Section 8.

STORAGE: Store away from heat and sunlight to prevent spontaneous polymerization. Store below 120° F (49° C). Protect containers from physical damage. Storage of containers should conform to flammable and combustible liquid regulations.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

HAND PROTECTION: Use nitrile, butyl or other gloves that are resistant to chemicals in Section 2. Replace immediately if punctured or torn or when a change of appearance (color, elasticity, shape) occurs. RadTech recommends a minimum of 0.45mm thick, nitrile gloves for long duration exposure (up to 4 hours on most UV/EB-curing acrylates) or mechanical handling activities. Single use, disposable nitrile gloves are recommended by RadTech for short duration exposures not exceeding 30 minutes, in situations where only splashes are likely.

EYE PROTECTION: Use splash-proof safety goggles, safety glasses, or face shields that are ANSI approved to prevent eye contact. Eyewash availability is also recommended.

SKIN PROTECTION: Protective or disposable outer clothing is recommended.

RESPIRATORY PROTECTION: Use local exhaust to control vapors and mists. Use of NIOSH approved respirators for organic vapors, is recommended where TLV is exceeded.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Moderate viscosity with mild odor

BOILING POINT (°F): Not established

SPECIFIC GRAVITY: 1.05 (THFA)

VAPOR PRESSURE (mm Hg): Not established

SOLUBILITY IN WATER: Not soluble

pH: Not established

PHYSICAL STATE: Liquid

FREEZING POINT: Not established

EVAPORATION RATE: <1

VAPOR DENSITY: Heavier than air

VOC: < 7.0 grams/liter

DENSITY: 3.969 kg/gal

SECTION 10 REACTIVITY / STABILITY HAZARD DATA

STABILITY: This material is stable under recommended storage and handling conditions.

CONDITIONS TO AVOID: Excessive heat, ignition sources and contamination with dirt and other foreign materials.

INCOMPATIBILITY: Avoid contamination or inappropriate mixing with strong oxidizing agents, peroxides, strongly caustic materials and metal corrosion products including rust. Do not expose to UV light during storage.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal oxidation or pyrolysis (as in fire) may yield carbon dioxide, carbon monoxide and volatile organic fragments which are flammable, irritating or toxic.

HAZARDOUS POLYMERIZATION: Under certain conditions (excess temperatures and contamination) hazardous polymerization may occur. Avoid high temperature and contamination with foreign materials.

SECTION 11 TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA: (TFHA, RTECS Reference)

ORAL LD50 - 1600 mg/kg (Rat), 2300 mg/kg (Mouse), 800 mg/kg (Guinea pig)

DERMAL LD50 – 5 gm/kg (Guinea pig)



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SUBCHRONIC EFFECTS: Subchronic exposures (oral, dermal and inhalation) at relatively high levels have demonstrated systemic toxicity, reproductive toxicity, and central nervous system depression in either rats, rabbits or dogs. An oral developmental screening study in rats expressed a lower mean fetal body weight at 100 mg/kg/day.

MUTAGENICITY: Not mutagenic by the Ames Test.

CARCINOGENICITY: IARC? No NTP? No OSHA? No

SECTION 12 ECOLOGICAL INFORMATION

No determination has been made on ecological impact of the mixture. However, it is recommended to prevent contamination of the environment with this product, i.e. soil, landfills, drains, sewers, surface waters, etc.

SECTION 13 DISPOSAL CONSIDERATIONS

This product is not regulated as a hazardous substance under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of this product in accordance with all applicable laws and regulations.

SECTION 14 TRANSPORTATION INFORMATION

Transport this product in accordance with all applicable laws and regulations. This product, as supplied, is not regulated nor classified as a hazardous material/dangerous good by United States Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO), the Canadian Transportation of Dangerous Goods Act (TDG), or the International Air Transport Association (IATA).

SECTION 15 REGULATORY INFORMATION

This Material Safety Data Sheet has been formatted to the best of our ability in accordance with American National Standards Institute (ANSI), European Communities (EC), and contains hazard criteria and all information required by the Canadian Controlled Products Regulation (CPR) in regard to this product.

INTERNATIONAL REGULATIONS

Canadian Inventory Status: All components of this product are currently listed on the Canadian Domestic Substance List (DSL) and/or the Canadian Non-Domestic Substance List (NDSL).

European Inventory Status: All components of this product are listed on the European Inventory of Existing Commercial Substances (EINICS) or are exempt from the listing. This product is classified and labeled in accordance with EC directives.

U.S. FEDERAL REGULATIONS

California Proposition 65 RTK: This product may contain trace chemicals not added as a part of the formulation but remaining as residuals from the manufacturing process of our raw materials suppliers, that are considered by the state of California to cause cancer: None Known

Coalition of Northeastern Governors (CONEG): This product meets the requirements of CONEG pertaining to heavy metals total content of no more than 100 PPM. No heavy metals are added as a part of the formulation, but raw materials may contain residual parts per million as naturally occurring elements.

Food and Drug Administration (FDA) Food Packaging Status: This product has not been cleared by the FDA for use in food packaging and/or other applications as an indirect food additive.

Occupational Safety and Health Act (OSHA): This product is classified as a Class III B combustible liquid.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III:

Section 302 – Extremely Hazardous Substances (EHS): None

Section 304 – CERCLA Hazardous Substances: None

Section 311/312 – Hazard Categories: Acute hazard.

Section 313 – Toxic Chemicals: None

Toxic Substances Control Act (TSCA)

Section 5(e): This product is not regulated under the Consent Order/Significant New Use Rule.

Section 8(b) – Inventory Status: All chemicals in this product are TSCA listed.

SECTION 16 OTHER INFORMATION

HMIS® ratings are a registered trade and service mark of the National Paint and Coatings Association with the following scale:

* = Chronic health effect

PPE Index

4 = Severe Hazard

A = Safety Glasses



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3 = Serious Hazard
2 = Moderate Hazard
1 = Slight Hazard
0 = Minimal Hazard

B = Safety Glasses and Gloves
C = Safety Glasses, Gloves and Protective Apron
D = Face Shield, Gloves and Protective Apron
E = Safety Glasses, Gloves and Respirator

Definitions

TWA – Time Weighted Average

TLV – Threshold Limit Value

STEL – Short Term Exposure Limit

CAS# - Chemical Abstract Service Number

NTP – National Toxicology Program

PEL – Permissible Exposure Limit

IARC - International Agency for Research on Cancer

ANSI – American National Standards Institute

AIHA WEEL – American Industrial Hygiene Association Workplace Environmental Exposure Limits

Supersedes: March-15-2005

Disclaimer: To the best of our knowledge, the product information contained herein is based upon data believed to be reliable, however Nor-Cote makes no warranty and disclaims any liability whatsoever for its accuracy or completeness. Since the actual use of the product is beyond our control, no guarantee expressed or implied, is made by Nor-Cote as to the effects of such uses nor does Nor-Cote assume liability arising out of the use of this product by others. It remains the responsibility of the user to ensure that the use of the product herein is in accordance with all applicable laws and regulations.