SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: **02-070 THINNER**
Product Use: Ultra-violet Curable Screen Printing Ink

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 (United States):
800-424-9300 CHEMTREC

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 (Outside U.S.):
703-527-3887 CHEMTREC

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)
Emergency Phone (Outside U.S.):
703-527-3887 CHEMTREC

SECTION 2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Product is a clear to light yellow liquid with mild acrylic odor that may irritate eyes, skin and respiratory system. Product may also cause allergic skin reaction. Avoid spillage to sewers or waterways.

ROUTES OF ENTRY: Skin, Eyes, Inhalation, Ingestion

ACUTE HEALTH EFFECTS:
- **Skin Contact:** Potential irritant and can cause allergic skin reaction.
- **Eye Contact:** Liquid, vapors, or mists may cause eye irritation. Protect eyes from repeated or prolonged contact.
- **Inhalation:** May cause irritation to upper respiratory tract upon prolonged or repeated inhalation.
- **Ingestion:** May be harmful if swallowed. Gastrointestinal tract irritation may result.

CHRONIC: Repeated or prolonged contact may cause sensitization.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing health disorders and pregnant women should consult their physician before using this product. Repeated and prolonged overexposure may increase the potential for adverse health effects.

HMIS ® RATING: Health - 1 Flammability - 1 Physical Hazard – 1

GHS CLASSIFICATION:
Physical Hazards: Classification not possible for mixture
Health Hazards: Classification not possible for mixture
Environmental Hazards: Classification not possible for mixture

SECTION 3 COMPOSITION

CHEMICAL NAME	PERCENT BY WEIGHT	CAS#	EINECS#	Symbol	R Phrase
N-Vinyl-2-Pyrrolidone (NVP)	25%	88-12-0	201-800-4	Xn	R20/21/22, R37, R40, R41, R48/20
Acrylated Monomers	73%	Proprietary	Proprietary	Xi, N	R36/37/38/51/53
Photoinitiator	2%	Proprietary	Proprietary	Not available	Not available

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

FLASHPOINT: 171C/340F (PMCC)
FLAMMABLE/EXPLOSIVE LIMITS (Volume % in air): Not established
EXTINGUISHING METHOD: Water fog, carbon dioxide (CO2) or dry chemical
AUTO-IGNITION TEMPERATURE: Not established
OSHA CLASSIFICATION: Class IIIB Combustible

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 90° F (32° C). Protect containers from physical damage. Storage of containers should conform to flammable and combustible liquid regulations.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS: Not established

Component	Exposure Limit
N-Vinyl-2-Pyrrolidone (NVP)	ACGIH TLV: 0.05 ppm
Acrylate Monomers	None known
Photoinitiator Mixture	None known

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. A minimum of 0.45mm thick gloves for long duration exposure (up to 4 hours) or mechanical handling activities; single use, disposable gloves for short duration exposures not exceeding 30 minutes or where splashes are likely, are recommended.

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

SKIN PROTECTION: Protective or disposable outer clothing is recommended.

VENTILATION: Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources of air contamination.

RESPIRATORY PROTECTION: Use of NIOSH approved respirators for organic vapors is recommended where exposure limits are exceeded.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR: Clear/Pale yellow with mild acrylic odor
PHYSICAL STATE: Liquid
BOILING POINT (°F): Not available
FREEZING POINT: Not available
SPECIFIC GRAVITY: 0.998
VOLATILE CHARACTERISTICS: Negligible
VAPOR PRESSURE (mm Hg): Not available
DENSITY: 3.77 kg/gal
SOLUBILITY IN WATER: Negligible
pH: Not available

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

LD50 – Not determined for mixture
LC50 – Not determined for mixture
MUTAGENICITY: Not determined for mixture
REPRODUCTIVE EFFECTS: Not determined for mixture
CARCINOGENICITY: **IARC?** No **NTP?** No **OSHA?** No
NVP, one component of this product is a possible cancer hazard based upon animal studies. Acute Oral LD50 is 1500 mg/kg (rat). Acute Dermal LD50 is 560 mg/kg (rabbit). Acute Inhalation LC50 is 3.2 mg/l (rat). Negative results and no chromosome-damaging effects were found with mutagenicity studies. Carcinogenicity studies (Rat, 2-year inhalation) showed tumors observed in nasal mucosa of both sexes at 20 ppm and in males at 10pm. Liver and laryngeal tumors at 20ppm and liver damage at 5ppm in both sexes.

SECTION 12 ECOLOGICAL INFORMATION

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

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of this product in accordance with all applicable laws and regulations. This product is not considered a hazardous waste under US EPA 40 CFR 261.

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), or the Canadian Transportation of Dangerous Goods Act (TDG).

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).

California Proposition 65 RTK: This product may contain substances that are known to the state of California to cause cancer or reproductive toxicity.

Clean Air Act – Ozone Depleting Substances (ODS): This product and its components do not contain Ozone Depleting Substances.

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.

European Union Directive 2002/95/EC Restriction of Hazardous Substances (RoHS): This product is in compliance with the requirements of the RoHS Directive.

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

Global Inventories: All components of this product are listed or in compliance with the following chemical inventories:

Australian Inventory of Chemical Substances (AICS)
Canadian Domestic Substance List (DSL) or Non-Domestic Substance List (NDSL)
European Inventory of Existing Commercial Substances (EINECS), the European List of Notified Chemical Substances (ELINCS)
United States Toxic Substances Control Act (TSCA) listed.

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

Section 302 – Extremely Hazardous Substances (EHS): This product is not regulated as an EHS.
Section 304 - CERCLA: This product is not regulated for emergency release notification.
Section 311/312 – Hazard Communication Standard (HCS): This product is classified as an acute hazard.
Section 313 – Toxic Chemical List (TCL): This product contains the following components that are regulated under the Toxic Chemical Release Reporting requirements 40 CFR 372: None

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
3 = Serious Hazard	B = Safety Glasses and Gloves
2 = Moderate Hazard	C = Safety Glasses, Gloves and Protective Apron
1 = Slight Hazard	D = Face Shield, Gloves and Protective Apron
0 = Minimal Hazard	E = Safety Glasses, Gloves and Respirator

EU Risk Phrases
R21/22: Harmful in contact with skin and if swallowed
R36/37/38: Irritating to eyes, respiratory system and skin.
R43: May cause sensitization by skin contact.
R50: Very toxic to aquatic organisms
R51/53: Toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment
R62: Possible risk of impaired fertility

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

Supersedes: April 28, 2006

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.