



SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

UV9 SERIES

UV CURABALE SCREEN PRINTING INK (Densities in kilograms per gallon) [*Specific gravity*]

010 MIXING CLEAR (4.05) [1.077]	410 HT YELLOW (4.07) [1.077]	C605 SP BB 201 RED (4.19) [1.108]
011 METALLIC MIXING CLEAR (4.05) [1.077]	415 UD WEATHERABLE YELLOW (4.10) [1.084]	C610 SP BB 187 RED (3.78) [1.000]
012 OVERPRINT CLEAR (4.06) [1.075]	420 HT MAGENTA (4.10) [1.084]	C710 SP TARGET MATTE 186 RED (4.35) [1.150]
015 SATIN OVERPRINT CLEAR (4.25) [1.123]	430 HT CYAN (4.07) [1.077]	C732 SP 294 BLUE (4.21) [1.113]
026 BARRIER WHITE (5.50) [1.454]	440 HT BLACK (4.10) [1.084]	C743 SP MATTE CYAN (4.40) [1.165]
030 SHADING BLACK (4.09) [1.082]	450 HT BASE (4.04) [1.067]	C744 SP MATTE 300 BLUE (4.41) [1.167]
031 TINTING WHITE (4.41) [1.167]	485 WARM RED (4.19) [1.105]	C792 SP BB 578 GREEN (3.78) [1.000]
064 CMG YELLOW GS (4.09) [1.087]	510 HD HT YELLOW (4.07) [1.078]	C793 SP BB 370 GREEN (3.78) [1.000]
066 CMG YELLOW RS (4.23) [1.119]	520 HD HT MAGENTA (4.12) [1.091]	C820 LV ULTRA DOT BLACK (4.08) [1.080]
101 PRIMROSE YELLOW (4.18) [1.107]	530 HD HT CYAN (4.14) [1.096]	C821 LV ULTRA DOT CYAN (4.06) [1.073]
111 LEMON YELLOW (4.14) [1.089]	540 HD HT BLACK (4.14) [1.094]	C822 LV ULTRA DOT MAGENTA (4.08) [1.079]
114 CMG ORANGE (4.16) [1.096]	710 ULTRA DOT HT YELLOW (4.06) [1.075]	C823 LV ULTRA DOT YELLOW (4.05) [1.072]
121 CMG RED YS (4.13) [1.091]	720 ULTRA DOT HT MAGENTA (4.07) [1.076]	C824 LV ULTRA DOT MAGENTA (4.08) [1.079]
123 MEDIUM YELLOW (4.14) [1.095]	730 ULTRA DOT HT CYAN (4.06) [1.073]	C825 LV ULTRA DOT BASE (4.01) [1.067]
127 CMG VIOLET (4.10) [1.085]	740 ULTRA DOT HT BLACK (4.08) [1.079]	C1026 SILICONE FREE CLEAR (4.03) [1.067]
131 BRILLIANT ORANGE (4.14) [1.097]	BDY BALANCED DENSITY YELLOW (4.09) [1.081]	C1027 #288 HT BLUE (4.21) [1.114]
141 FIRE RED (4.15) [1.098]	BDM BALANCED DENSITY MAGENTA (4.07) [1.076]	C1059 SP BB 102 YELLOW (4.21) [1.114]
151 SCARLET RED (4.18) [1.105]	BDC BALANCED DENSITY CYAN (4.06) [1.074]	C2046 HD YELLOW (4.09) [1.087]
155 RUBINE RED (4.17) [1.102]	BDK BALANCED DENSITY BLACK (4.08) [1.079]	C2048 HD CYAN (4.07) [1.076]
160 RHODAMINE RED (4.34) [1.147]	C167 SP PEARL WHITE (4.72) [1.249]	C2117 HD MAGENTA (4.09) [1.087]
164 CMG RED BS (4.12) [1.087]	C168 SP BB 286 BLUE (4.17) [1.104]	C2234 MATTE WHITE (5.93) [1.569]
165 CMG MAGENTA (4.11) [1.086]	C278 BB HT MAGENTA LD (4.06) [1.075]	C2242 ULTRA DOT HT MAGENTA (4.07) [1.078]
190 PROCESS BLUE (4.29) [1.134]	C306 SP BB MAGENTA (4.11) [1.088]	C2243 ULTRA DOT HT CYAN (4.06) [1.074]
200 PEACOCK BLUE (4.26) [1.127]	C308 BB HT YELLOW LD (4.05) [1.071]	C2302 #2728 (3.95) [1.044]
205 REFLEX BLUE (4.19) [1.109]	C309 BB HT CYAN LD (4.05) [1.072]	C2344 MATTE WHITE (5.88) [1.556]
210 ULTRA BLUE (4.23) [1.118]	C368 SP DEAD FRONT BLACK (4.29) [1.135]	C2353 #279 (3.78) [1.000]
220 EMERALD GREEN (4.23) [1.118]	C369 SP BB SATIN CLEAR (4.21) [1.114]	C2367 HD WEATHERABLE YELLOW (4.10) [1.085]
230 CMG BLUE (4.13) [1.097]	C373 SP BB 102 YELLOW (4.17) [1.103]	C2401 LD YELLOW (3.78) [1.000]
301 OPAQUE BLACK (4.11) [1.089]	C441 BB HT CYAN MD (4.06) [1.073]	C2402 LD MAGENTA (3.78) [1.000]
305 JET BLACK (4.15) [1.093]	C442 BB HT YELLOW MD (4.07) [1.076]	C2403 LD CYAN (3.78) [1.000]
311 OPAQUE WHITE (4.98) [1.316]	C443 BB HT MAGENTA MD (4.07) [1.077]	C2404 LD BLACK (3.78) [1.000]
312 DENSE BLACK (4.13) [1.096]	C477 SP SATIN 306 BLUE (4.50) [1.197]	CBASE MATTE CLEAR BASE (3.82) [1.009]
325 CMG GREEN (4.17) [1.103]	C518 SP TARGET 186 RED (4.20) [1.111]	

North America:

NOR-COTE INTERNATIONAL, INC.

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MSDS Issuer: EHS Department
Emergency Phone:
CHEMTREC (United States)
800-424-9300

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NOR-COTE INTERNATIONAL LTD.

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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.

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#05-08 Techplace 1,
Singapore 569628
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Emergency Phone:
CHEMTREC (Outside U.S.)
703-527-3887

SECTION 2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Product is a liquid with mild acrylic odor that may irritate eyes, skin and respiratory system. Effects may be delayed for several hours. Product may also cause allergic skin reaction. Avoid breathing vapors. Avoid spillage to sewers or waterways.

ROUTES OF ENTRY: Dermal, 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 - 2 Flammability -1 Physical Hazard - 1 PPE - C



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SECTION 3 COMPOSITION

CHEMICAL NAME	PERCENT BY WEIGHT	CAS#	EINECS#	Symbol	Risk Phrase
1,6-Hexanediol Diacrylate	16-42%	13048-33-4	235-921-9	Xi	R36/38, R43
Trimethylolpropane Triacrylate	0.5-14%	15625-89-5	239-701-3	Xi	R36/38, R43
Acrylated oligomer	6-32%	Proprietary	Proprietary	Not available	Not available
Acrylated monomer mixture	5-28%	Proprietary	Proprietary	Xi, N	R36, R51/53
Photoinitiator Mixture	2-10%	Proprietary	Proprietary	Xn, N	R22, R36/37/38, R50/52/53, R62
Carbon Black (030, 301, 305, 312, 440, 540, 740, BDK, C368, C518, C710 and C820, C1027)	<10%	1333-86-4	215-609-9	Not available	Not available
Copper Compound (190, 200, 205, 210, 220, 230, 305, 430, 530, 730, BDC, C168, C309, C441, C477, C732, C743, C744, C821, C2048, C2117, C2302)	<8%	147-14-8	205-685-1	Not available	Not available
Rosin (410, 510, 710, 1027, C373, C442, C823)	<0.5%	8050-09-7	232-475-7	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: Not determined, but expected to be >200° F (> 93.3°C) based on 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

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 for mixture.



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Component	Exposure Limit
1,6 Hexanediol Diacrylate	AIHA WEEL: 1mg/m3 DSEN
Acrylated Oligomer	None known
Acrylated Monomers	None known
Photoinitiators	None known
Trimethylolpropane Triacrylate	AIHA WEEL: 1mg/m3, skin
Pigments	Not applicable in mixture

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 & PHYSICAL STATE: Yellow liquid with moderate viscosity and mild acrylic odor.

BOILING POINT (°F): Not available

SPECIFIC GRAVITY: See section 1

VAPOR PRESSURE (mm Hg): Not established

SOLUBILITY IN WATER: Not soluble

pH: Not available

FREEZING POINT: Not available

EVAPORATION RATE: Slower than diethyl ether

VAPOR DENSITY: Heavier than air

VOC: Not established but expected to be less than 2%

DENSITY: See section 1

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: Slightly toxic by ingestion. Prolonged or repeated exposure may result in sensitization.

LD50 – Not determined for mixture

LC50 – Not determined for mixture

CARCINOGENICITY: IARC? No

NTP? No

OSHA? No

MUTAGENICITY: Not determined for mixture

REPRODUCTIVE EFFECTS: Not determined for mixture

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. If this product as supplied becomes a waste, it is not considered a hazardous waste under US EPA 40 CFR 261.



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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 contains the following components that are regulated by the state of California as a known carcinogen or reproductive toxin: None known

Clean Air Act- Hazardous Air Pollutants (HAP): This product and its components do not contain any known Hazardous Air Pollutants.

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

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.

Restriction of Hazardous Substances (RoHS): This product complies with EU Directive 2002/95/EC for the restriction of Lead, Mercury, Hexavalent chromium, Cadmium, PBBs and PBDEs.

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: Copper Compound (CAS 147-14-8)

Toxic Substances Control Act (TSCA) 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
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

Xi: Irritant
Xn: Harmful
N: Dangerous for the environment
R21: Harmful in contact with skin
R22: Harmful 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: Toxic to aquatic organisms
R52: Harmful to aquatic organisms
R53: May cause long-term adverse effects in the aquatic environment
R62: Possible risk of impaired fertility

Definitions

TWA – Time Weighted Average



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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

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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.