



SAFETY DATA SHEET

Version 10 Issuing Date: 08-Oct-2018

Flat Vinyl VYL Series Solvent Based Screen Inks

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Flat Vinyl VYL Series Solvent Based Screen Inks

VYL **Product code**

VYL-010(K77902) VYL-014(K77551) VYL-030(K77547) VYL-031(K77548) Product Code(s)

VYL-035(K77550) VYL-040(K77549) VYL-041(K77552) VYL-050(K77553) VYL-052(K77554) VYL-070(K77778) VYL-080(K77901) VYL-150(K91956) VYL-152(K91958) VYL-350(K91821) VYL-351(K91961) VYL-352(K91962) VYL-504(K72408) VYL-700(K37287) VYL-701(K85821) VYL-800(K37288)

VYL-801(K84777) VYL-900(K37446) VYL-901(K77133) VYL-1001(K76178) K82248

Product Use Solvent Based Screen Printing Ink.

Manufactured by

FUJIFILM Manufacturing U.S.A., Inc.

20 West 14th Avenue

North Kansas City, MO. 64116 USA

Phone#: (913) 342-4060

Distributed in Canada by

FUJIFILM Canada, Inc. 600 Suffolk Ct.

Mississauga, Ontario L5R 4G4

SDSs are available at the following http://www.fujifilmusa.com/msds

website(s):

U.S.A: 800-473-3854 Canada: 800-263-5018 **Company Phone Number**

Transport-CHEMTREC Inside NA: 800-424-9300 **Emergency Telephone**

Transport-CHEMTREC Outside NA: 703-527-3887 Transport-CANUTEC Inside Canada: 613-996-6666 Medical Emergency (24 hour): 877-935-7387

EHS@fujifilm.com E-mail

2. HAZARDS IDENTIFICATION

Classification

Category 4 Acute toxicity - Inhalation (Dusts/Mists)

VYL - Flat Vinyl VYL Series Solvent Based Screen Inks

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Flammable liquids	Category 3

GHS Label elements, including precautionary statements

Danger

Hazard Statements

Harmful if inhaled Causes skin irritation

Causes serious eye damage

May cause cancer

May cause respiratory irritation. May cause drowsiness or dizziness

May cause damage to organs through prolonged or repeated exposure

Flammable liquid and vapor



Precautionary Statements

Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Wear protective gloves/protective clothing/eye protection/face protection

Use only outdoors or in a well-ventilated area

Wash face, hands and any exposed skin thoroughly after handling

Do not breathe dust/fume/gas/mist/vapors/spray

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/Bond container and receiving equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Use explosion-proof electrical (ventilation and lighting) equipment

Keep cool

Response

If exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician

If skin irritation occurs: Get medical advice/attention

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

In case of fire: Use CO2, dry chemical, or foam to extinguish

Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not classified

Other hazards

May be harmful if swallowed May be harmful in contact with skin

Unknown Acute Toxicity

9.1% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Methoxypropanol acetate	108-65-6	10-30%
Cyclohexanone	108-94-1	10-30%
Hydrous aluminum silicate	1332-58-7	10-30%
Ethylene glycol monobutyl ether	111-76-2	10-30%
2-(2-hydroxy-3,5-di-tert-amylphenyl) benzotriazole	25973-55-1	1-5%
Naphthalene	91-20-3	0.1-1%

^{*}The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures for different exposure routes

General advice Do not get in eyes, on skin, or on clothing. If symptoms persist, call a physician. Do not

breathe dust/fume/gas/mist/vapors/spray.

Eye contact Keep eye wide open while rinsing. In case of contact with substance, immediately flush

eyes with running water for at least 30 minutes. Do not rub affected area. Call a physician

immediately.

Skin contact IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get

medical advice/attention.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON

CENTER or doctor/ physician.

Protection of First-aidersUse personal protective equipment.

Most important symptoms/effects, acute and delayed

May cause redness, itching, and pain. Burning feeling and temporary redness. Burning sensation. Redness.

Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray. Carbon dioxide (CO2). Dry chemical. Alcohol resistant foam.

Unsuitable Extinguishing Media

None known.

Specific hazards arising from the chemical

Flammable. Will be easily ignited by heat, sparks or flames.

Hazardous Combustion Products

Carbon oxides. Hydrogen chloride.

Explosion Data

Sensitivity to Mechanical Impact none

Sensitivity to Static Discharge Yes

Protective Equipment and Precautions for Firefighters

Move containers from fire area if you can do it without risk. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Use personal protective equipment. Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up

Methods for Containment A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth,

sand or other non-combustible material and transfer to containers.

Methods for cleaning up Cover liquid spill with sand, earth or other noncombustible absorbent material. Pick up and

transfer to properly labeled containers. Use personal protective equipment. Take precautionary measures against static discharges. Pay attention to flashback. Use only non-sparking tools. Clean contaminated surface thoroughly. After cleaning, flush away

traces with water.

Other information Water spray may reduce vapor; but may not prevent ignition in closed spaces.

7. HANDLING AND STORAGE

Precautions for safe handling

Wear personal protective equipment. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Ensure adequate ventilation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH	AIHA - Workplace Environmental Exposure
				Levels (WEELs) - TWAs
Methoxypropanol acetate				50 ppm TWA
Cyclohexanone	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m³ (vacated) TWA: 25 ppm (vacated) TWA: 100 mg/m³ (vacated) S*	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m ³	
Hydrous aluminum silicate	TWA: 2 mg/m³ particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction	TWA: 10 mg/m³ total dust TWA: 5 mg/m³ respirable dust	
Ethylene glycol monobutyl ether	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m³ (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m³ (vacated) S* S*	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m³	
Naphthalene	TWA: 10 ppm S*	TWA: 10 ppm TWA: 50 mg/m³ (vacated) TWA: 10 ppm (vacated) TWA: 50 mg/m³ (vacated) STEL: 15 ppm (vacated) STEL: 75 mg/m³	IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m³ STEL: 15 ppm STEL: 75 mg/m³	

Exposure controls

Engineering Measures Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Tightly fitting safety goggles. Face-shield.

specification

Skin and body protection Wear protective gloves/clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved

respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be

provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash before

reuse. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance According to product Odor Solvent

Odor Threshold Not available Physical State @20°C Liquid

pH Not available Physical state @20 C Elquid

Specific Gravity1.022 - 1.454Molecular WeightNot availableFlash point109 °F / 43 °CAutoignition temperatureNot availableDecomposition temperatureNot availableBoiling point / boiling range295 °F / 146 °C

Melting point / melting range Not available Freezing Point Not available

Flammability Limit in Air

upper 10.8 Lower 1.1

646.48

VYL - Flat Vinyl VYL Series Solvent Based Screen Inks

Not available

Oxidizing Properties Explosive Properties Not available Practically insoluble **Partition coefficient** Not available

Solubility **Evaporation rate** Not available **Vapor Pressure** 4.0 mmHg @ 20 °C

Not available Not available Vapor density **Density** 8.5-12.1 Actual VOC (lb/gal) Weight per Gallon (lbs) 4.83-5.96

VOC (lb/gal) 5.395 VOC (g/I) **Dynamic viscosity** Not available

VOC Content California

VOC Content of Material 580-715 grams per liter VOC Content of Coating less Water and Exempt Solvents 580-715 grams per liter

10. STABILITY AND REACTIVITY

Reactivity

Stable under recommended storage conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization does not occur.

Conditions to Avoid

Heat (temperatures above flash point), sparks, ignition points, flames, static electricity. Heat, flames and sparks.

Incompatible Materials

Strong oxidizing agents, strong acids, and strong bases.

Hazardous Decomposition Products

Hydrogen chloride. Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Acute toxicity

Inhalation Harmful by inhalation. May cause irritation of respiratory tract. May cause drowsiness or

dizziness.

Risk of serious damage to eyes. **Eyes**

Skin Irritating to skin.

Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal Ingestion

irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)

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Methoxypropanol acetate	= 8532 mg/kg (Rat)	> 5 g/kg (Rabbit)	5321 mg/m ³
Cyclohexanone	= 1544 mg/kg (Rat)	= 947 mg/kg (Rabbit)	= 8000 ppm (Rat) 4 h
Hydrous aluminum silicate	> 5 g/kg (Rat)	> 5000 mg/kg (Rat)	
Ethylene glycol monobutyl ether	= 470 mg/kg (Rat)	400 mg/kg (Rabbit)	= 450 ppm (Rat) 4 h = 486 ppm (
		2270 mg/kg (Rat)	Rat) 4 h
2-(2-hydroxy-3,5-di-tert-amylphenyl)	> 2325 mg/kg (Rat)		
benzotriazole			
Naphthalene	= 1110 mg/kg (Rat) = 490 mg/kg (= 1120 mg/kg (Rabbit) > 20 g/kg (> 340 mg/m³ (Rat) 1 h
	Rat)	Rabbit)	

Information on toxicological effects

No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to skin.

Corrosivity
Risk of serious damage to eyes.
Sensitization
No information available.
Mutagenic Effects
Reproductive Toxicity
Risk of serious damage to eyes.
No information available.
No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Contains a known or suspected carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Cyclohexanone	A3	Group 3		
Ethylene glycol monobutyl ether	A3	Group 3		
Naphthalene	A3	Group 2B	Reasonably Anticipated	Х

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

NTP: (National Toxicity Program)

Reasonably Anticipated - Reasonably Anticipated to be a

Human Carcinogen

Known - Known Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1: Carcinogenic to humans

Group 2A: Probably carcinogenic to humans Group 2B: Possibly carcinogenic to humans

Group 3: Not classifiable as to its carcinogenicity to humans

OSHA: (Occupational Safety & Health Administration)

X - Present

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Chronic toxicity May cause adverse liver effects. May cause adverse kidney effects.

Target Organ Effects Blood, Central nervous system (CNS), Eyes, Hematopoietic System, Kidney, Liver, Lungs,

Lymphatic System, Respiratory system, Skin.

Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 2162 mg/kg
ATEmix (dermal) 2472 mg/kg
ATEmix (inhalation-dust/mist) 2.8 mg/l
ATEmix (inhalation-vapor) 35.5 mg/l

ATE: Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity

.

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Methoxypropanol acetate		Pimephales promelas: 161 mg/L at 96 h		
Cyclohexanone	20: 96 h Chlorella vulgaris mg/L EC50	Pimephales promelas: 481 - 578 mg/L at 96 h Pimephales promelas: 8.9 mg/L at 96 h		
Naphthalene		Pimephales promelas: 5.74 - 6.44 mg/L at 96 h Pimephales promelas: 1.99 mg/L at 96 h		1.09 - 3.4: 48 h Daphnia magna mg/L EC50 Static

Persistence and degradability

No information available.

Bioaccumulation

Chemical Name	Octanol Water Partition Coefficient (log pow)	
Methoxypropanol acetate	0.43	
Cyclohexanone	0.86	
Ethylene glycol monobutyl ether	0.81	
Naphthalene	3.6	

Mobility

No information available.

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Dispose of in accordance with all applicable national environmental laws and regulations. Dispose of in accordance with federal, state, and local regulations. Do not dispose of waste into sewers, drains or use other methods that will come into contact with surface waters.

Contaminated packaging

Do not re-use empty containers.

US EPA Waste Number

D001

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name Printing ink UN1210 **UN/ID No Hazard Class** 3 **Packing Group** Ш

Reportable Quantity (RQ) Cyclohexanone: RQ kg= 141.40,

UN1210 Printing ink 3, III Description 129

Emergency Response Guide

Number

Packaging Exceptions 150 Non-bulk Packaging 173 **Bulk Packaging** 242

TDG

Proper Shipping Name Printing ink UN/ID No UN1210 **Hazard Class** 3 **Packing Group** Ш

Description UN1210 Printing ink 3, III

MEX

Proper Shipping Name Printing ink UN/ID No UN1210 **Hazard Class** 3 **Packing Group** Ш

UN1210 Printing ink 3, III Description

ICAO

Proper Shipping Name Printing ink **UN/ID No** UN1210 **Hazard Class** 3 **Packing Group** Ш

Description UN1210 Printing ink 3, III

<u>IATA</u>

Proper Shipping Name Printing ink UN/ID No UN1210 **Hazard Class** 3 **Packing Group**

UN1210 Printing ink 3, III Description

<u>IMDG</u>

Proper Shipping Name Printing ink **UN/ID No** UN1210 **Hazard Class Packing Group** Ш F-E, S-D **EmS-No**

UN1210 Printing ink 3, III Description

ADR/RID

Proper Shipping Name Printing ink **UN/ID No** UN1210 **Hazard Class** 3 **Packing Group** Ш

Classification Code

UN1210 Printing ink 3, III Description

ADR/RID-Labels 3

ADN

Proper Shipping Name Printing ink UN/ID No UN1210 **Hazard Class** Packing Group Ш **Classification Code** F1

Description UN1210 Printing ink 3, III

Limited quantity LQ7 VE01 Ventilation

15. REGULATORY INFORMATION

International Inventories

TSCA Yes **DSL/NDSL** Yes **PICCS** Yes **EINECS/ELINCS** No **ENCS** No **IECSC** Yes **KECL** Yes **AICS** Yes

*No - Indicates the component(s) of this product are either not listed or have not been determined to be listed on the inventory.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

TSCA Sections 4, 5 and 12(b)

This product does not contain any chemicals regulated by TSCA Sections 4, 5 or 12(b).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS No	SARA 313 - Threshold Values %	Weight-%
Ethylene glycol monobutyl ether	111-76-2	1.0	10-30%
Naphthalene	91-20-3	0.1	0.1-1%

SARA 311/312 Hazard Categories

Classification is shown in section 2 of this SDS

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):.

^{*}Yes - All component(s) of this product are included or are exempt from listing on the inventory.

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Naphthalene	100 lb	X	X	Χ

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):.

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Cyclohexanone	5000		RQ 5000 lb final RQ
			RQ 2270 kg final RQ
Naphthalene	100 1		RQ 100 lb final RQ
			RQ 45.4 kg final RQ RQ 1 lb final
			RQ
			RQ 0.454 kg final RQ

U.S. State Regulations

California Proposition 65



WARNING: Cancer - www.P65Warnings.ca.gov; Reproductive Harm - www.P65Warnings.ca.gov

Chemical Name	CAS No	California Prop. 65	Weight-%
Naphthalene	91-20-3	Carcinogen	0.1-1.0%
toluene	108-88-3	Developmental	<0.1%
vinyl chloride	75-01-4	Carcinogen	<0.01%
ethyl acrylate	140-88-5	Carcinogen	<0.01%
trichloroethylene	79-01-6	Carcinogen	<0.01%

U.S. State Right-to-Know Regulations

Rhode Island **Chemical Name** Massachusetts Pennsylvania Illinois **New Jersey**

Cyclohexanone	Χ	X	X	Χ	Χ
Hydrous aluminum silicate	X	X	X		X
Ethylene glycol monobutyl ether	Х	Х	Х	Х	Х
Naphthalene	Χ	Х	X	Х	X

International Regulations

Canada - NDSL

This product does not contain any NDSL chemicals.

Mexico - Grade

Moderate risk, Grade 2

Mexico - Carcinogen Status and Exposure Limits

Chemical Name	Carcinogen Status	Exposure Limits
Cyclohexanone		Mexico: TWA 50 ppm
		Mexico: TWA 200 mg/m ³
		Mexico: STEL 100 ppm
		Mexico: STEL 400 mg/m ³
Hydrous aluminum silicate		Mexico: TWA 10 mg/m ³
		Mexico: STEL 20 mg/m ³
Ethylene glycol monobutyl ether		Mexico: TWA 26 ppm
		Mexico: TWA 120 mg/m ³
		Mexico: STEL 75 ppm
		Mexico: STEL 360 mg/m ³
Naphthalene		Mexico: TWA 10 ppm
		Mexico: TWA 50 mg/m ³
		Mexico: STEL 15 ppm

Mexico: STEL 75 mg/m³

Other Regulations

No information available

CPSIA Formulated to comply
CONEG Formulated to comply
ASTM F-963 Formulated to comply
CHPA Formulated to comply
RoHS Formulated to comply
REACH/SVHC Does not comply
EN-71 Formulated to comply

16. OTHER INFORMATION

NFPA Health Hazard 2 Flammability 2 Instability 0 Physical and chemical

hazards -

HMIS Health Hazard 2* Flammability 2 Physical Hazard 0 Personal protection B

Prepared By FUJIFILM Environment, Health and Safety, phone: 800-473-3854

Revision Date 08-Oct-2018

Revision Note No information available

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our

knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in

any process, unless specified in the text.

end

^{*}Indicates a chronic health hazard.