

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Printing date 12/13/2023

Version: 1.2

Reviewed on 12/13/2023

1 Identification

Product identifier

Product name: ADApt G6, UV-LED Ink, White

Article number: I-4853-WH Application of the substance / the mixture: Printing inks

Details of the supplier of the safety data sheet Direct Color Systems

99 Hammer Mill Rd.
Rocky Hill, CT 06067-USA Manufacturer/Supplier:
Direct Color Systems
99 Hammer Mill Rd.
Rocky Hill, CT 06067-USA Emergency telephone number US: 24/7 CHEMTREC 1-800-424-9300 Emergency telephone number International: 24/7 CHEMTREC +1 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture

Acute Toxicity - Oral 4	H302 Harmful if swallowed.	
Skin Irritation 2	H315 Causes skin irritation.	
Eye Damage 1	H318 Causes serious eye damage.	
Sensitization - Skin 1	H317 May cause an allergic skin reaction.	
Toxic to Reproduction 1B	H360 May damage fertility or the unborn child.	
Specific Target Organ Toxicity - Repeated Exposure 2 H373 May cause damage to organs through prolonged or repeated		
	exposure.	

Label elements

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS). Hazard pictograms



Signal word Danger

Hazard-determining components of labeling:

4-(1-oxo-2-propenyl)-morpholine 2-phenoxyethyl acrylate Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide hexamethylene diacrylate propylidynetrimethanol, propoxylated, esters with acrylic acid Isobournyl Acrylate pentaerythritol, ethoxylated, esters with acrylic acid Page 1/12

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3,3,5-Trim	thylcyclohexyl acrylate
Tetrahydro	furfuryl Acrylate
Hazard sta	itements
Harmful if	swallowed.
Causes skin	n irritation.
Causes seri	ous eye damage.
May cause	an allergic skin reaction.
May damag	e fertility or the unborn child.
May cause	damage to organs through prolonged or repeated exposure.
Precaution	ary statements
Obtain spec	tial instructions before use.
Do not han	dle until all safety precautions have been read and understood.
Do not brea	the dust/fume/gas/mist/vapors/spray.
Wash thore	ughly after handling.
Do not eat,	drink or smoke when using this product.
Contamina	ted work clothing must not be allowed out of the workplace.
Wear prote	ctive gloves/protective clothing/eye protection/face protection.
If swallowe	ed: Call a poison center/doctor if you feel unwell.
If on skin:	Wash with plenty of water.
If in eyes: 1	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Cont
rinsing.	
	y call a poison center/doctor.
	or concerned: Get medical advice/attention.
Specific tre	atment (see on this label).
	l advice/attention if you feel unwell.
Rinse mou	
Take off co	ntaminated clothing and wash it before reuse.
	tion or rash occurs: Get medical advice/attention.
Wash conta	minated clothing before reuse.
Store locke	
D' C	

Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:	
5117-12-4 4-(1-oxo-2-propenyl)-morpholine	25 - 50%
Specific Target Organ Toxicity - Repeated Exposure 2, H373; Eye Damage 1, H318; Acute Toxicity - Oral 4, H302; Sensitization - Skin 1, H317	
48145-04-6 2-phenoxyethyl acrylate	≥ 10 - ≤ 25%
Toxic to Reproduction 2, H361; Sensitization - Skin 1A, H317	
75980-60-8 Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	
Toxic to Reproduction 2, H361	
13048-33-4 hexamethylene diacrylate	
Skin Irritation 2, H315; Eye Irritation 2A, H319; Sensitization - Skin 1, H317	
86178-38-3 3,3,5-Trimethylcyclohexyl acrylate	
Skin Irritation 2, H315; Eye Irritation 2A, H319; Sensitization - Skin 1B, H317; Specific Target Organ Toxicity - Single Exposure 3, H336	

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13463-67-7 titanium dioxide	≥ 2.5 - ≤ 10%
Carcinogenicity 2, H351	
53879-54-2 propylidynetrimethanol, propoxylated, esters with acrylic acid	2.5 - 10%
Eye Irritation 2A, H319; Sensitization - Skin 1, H317	
5888-33-5 Isobournyl Acrylate	2.5 - 10%
Skin Irritation 2, H315; Eye Irritation 2A, H319; Sensitization - Skin 1, H317; Specific Target Organ Toxicity - Single Exposure 3, H335	
51728-26-8 pentaerythritol, ethoxylated, esters with acrylic acid	$\geq 0 - \leq 10\%$
Skin Irritation 2, H315; Eye Irritation 2A, H319; Sensitization - Skin 1, H317	
2399-48-6 Tetrahydrofurfuryl Acrylate	≤ 2.5%
Toxic to Reproduction 1B, H360; Skin Corrosion 1C, H314; Eye Damage 1, H318; Acute Toxicity - Oral 4, H302; Sensitization - Skin 1, H317; Flammable Liquids 4, H227	
108-88-3 Toluene	≥0-≤2.5%
Flammable Liquids 2, H225; Toxic to Reproduction 2, H361; Specific Target Organ Toxicity - Repeated Exposure 2, H373; Aspiration Hazard 1, H304; Skin Irritation 2, H315; Specific Target Organ Toxicity - Single Exposure 3, H336	
77-99-6 propylidynetrimethanol	≥0-≤2.5%
Toxic to Reproduction 2, H361	
15305-07-4 Tris(N-hydroxy-N-nitrosophenylaminatoO,O')aluminium	$\geq 0 - \leq 2.5\%$
Acute Toxicity - Oral 4, H302; Sensitization - Skin 1B, H317	

4 First-aid measures

Description of first aid measures

General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing: Immediately call a doctor.

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: Use fire fighting measures that suit the environment. Special hazards arising from the substance or mixture No further relevant information available. Advice for firefighters

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions:

Do not allow product to reach sewage system or any water course.

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Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Information about protection against explosions and fires: Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep receptacle tightly sealed.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see section 7.

Control parameters

Components with limit values that require monitoring at the workplace:

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

13048-33-4 hexamethylene diacrylate

WEEL Long-term value: 1 mg/m³ DSEN

108-88-3 Toluene

- PEL Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
- REL Short-term value: 560 mg/m³, 150 ppm Long-term value: 375 mg/m³, 100 ppm
- TLV Long-term value: 20 ppm BEI, OTO, A4

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Ingredients with biological limit values:

108-88-3 Toluene

BEI 0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene

> 0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene

0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background) Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the eyes.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed. **Eye protection:**



Tightly sealed goggles

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9 Physical and chemical properties

Information on basic physical and che General Information Appearance:	mical properties
Form:	Liquid
Color: Odor:	White Characteristic
Odor: Odor threshold:	Not determined.
pH-value:	Not determined.
•	Not determined.
Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 107 °C (224.6 °F)
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not applicable.
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not determined.
Density:	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water): Not determined.	
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity No further relevant information available.
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid No further relevant information available.
Incompatible materials: No further relevant information available.
Hazardous decomposition products: No dangerous decomposition products known.

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1 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Oral LD50 < 1,754 mg/kg

5117-12-4 4-(1-oxo-2-propenyl)-morpholine

Oral LD50 500 mg/kg (ATE)

13048-33-4 hexamethylene diacrylate

Oral LD50 > 5,000 mg/kg (rat)

Dermal LD50 > 3,000 mg/kg (rab)

13463-67-7 titanium dioxide

Oral LD50 > 20,000 mg/kg (rat)

Dermal LD50 > 10,000 mg/kg (rabbit)

Inhalative LC50/4 h > 6.82 mg/l (rat)

53879-54-2 propylidynetrimethanol, propoxylated, esters with acrylic acid

Oral LD50 > 2,000 mg/kg (rat)

51728-26-8 pentaerythritol, ethoxylated, esters with acrylic acid

Oral LD50 5,000 mg/kg (rat)

Dermal LD50 3,640 mg/kg (rabbit)

2399-48-6 Tetrahydrofurfuryl Acrylate

Oral LD50 928 mg/kg (rat)

108-88-3 Toluene

Oral LD50 5,000 mg/kg (rat)

Dermal LD50 12,124 mg/kg (rabbit)

Inhalative LC50/4 h 5,320 mg/l (mouse)

77-99-6 propylidynetrimethanol

Oral LD50 14,100 mg/kg (rat)

15305-07-4 Tris(N-hydroxy-N-nitrosophenylaminatoO,O')aluminium

Oral LD50 500 mg/kg (ATE)

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Primary irritant effect:
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on the skin: No irritant effect.

on the eye: Strong irritant with the danger of severe eye injury.

Sensitization: Sensitization possible through skin contact.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Harmful

Irritant

Carcinogenic categories IARC (International Agency for Research on Cancer)

13463-67-7 titanium dioxide: 2B

108-88-3 Toluene: 3

79-10-7 acrylic acid: 3

15625-89-5 2,2-bis(acryloyloxymethyl)butyl acrylate: 2B

128-37-0 Butylated hydroxytoluene: 3

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100-41-4 ethylbenzene: 2E	3
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127-19-5 N,N-dimethylacetamide: 2B

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. **Behavior in environmental systems:** Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. **Ecotoxical effects: Remark:** Toxic for fish Additional ecological information: General notes: Water hazard class 3 (Self-assessment): extremely hazardous for water Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Toxic for aquatic organisms **Results of PBT and vPvB assessment PBT:** Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations. **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

UN-Number	
DOT	not regulated
IMDG, IATA	UN3082
UN proper shipping name	
DOT	not regulated
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
	N.O.S. (2-phenoxyethyl acrylate, hexamethylene diacrylate), MARINE
	POLLUTANT
IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
	N.O.S. (2-phenoxyethyl acrylate, hexamethylene diacrylate)

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Transport hazard class(es)	
DOT	
Class	not regulated
IMDG, IATA	
Class	9 Miscellaneous dangerous substances and articles
Label	9
Packing group	
DOT	not regulated
IMDG, IATA	Ш
Environmental hazards:	
Marine pollutant:	Symbol (fish and tree)
Special marking (IATA):	Symbol (fish and tree)
Special precautions for user	Warning: Miscellaneous dangerous substances and articles
Hazard identification number (Kemler co	ode): 90
EMS Number:	F-A,S-F
Segregation groups	(SGG1) Acids
Stowage Category	À
Transport in bulk according to Annex II of	
MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
IMDG	
Limited quantities (LQ)	5L
Excepted quantities (EQ)	Code: E1
(=0)	Maximum net quantity per inner packaging: 30 ml
UN "Model Regulation":	Maximum net quantity per outer packaging: 1000 ml UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE LIQUID, N.O.S. (2-PHENOXYETHYL ACRYLATE HEXAMETHYLENE DIACRYLATE), 9, III

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available. SARA

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

108-88-3 Toluene

79-10-7 acrylic acid

TSCA (Toxic Substances Control Act):

5117-12-4 4-(1-oxo-2-propenyl)-morpholine: ACTIVE

48145-04-6 2-phenoxyethyl acrylate: ACTIVE

75980-60-8 Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide: ACTIVE

13048-33-4 hexamethylene diacrylate: ACTIVE

86178-38-3 3,3,5-Trimethylcyclohexyl acrylate: ACTIVE

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GHS05 GHS07 GHS08

Signal word Danger

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Hazard-determining components of la	ıbeling:
4-(1-oxo-2-propenyl)-morpholine	
2-phenoxyethyl acrylate	dura and da
Diphenyl(2,4,6-trimethylbenzoyl)phospl	line oxide
hexamethylene diacrylate	
propylidynetrimethanol, propoxylated, e	sters with acrylic acid
Isobournyl Acrylate	
pentaerythritol, ethoxylated, esters with	acrylic acid
3,3,5-Trimethylcyclohexyl acrylate	
Tetrahydrofurfuryl Acrylate	
Hazard statements	
Harmful if swallowed.	
Causes skin irritation.	
Causes serious eye damage.	
May cause an allergic skin reaction.	
May damage fertility or the unborn child	
May cause damage to organs through pr	olonged or repeated exposure.
Precautionary statements	
Obtain special instructions before use.	
Do not handle until all safety precaution	s have been read and understood.
Do not breathe dust/fume/gas/mist/vapo	nrs/spray.
Wash thoroughly after handling.	
Do not eat, drink or smoke when using t	his product.
Contaminated work clothing must not b	e allowed out of the workplace.
Wear protective gloves/protective clothi	ng/eye protection/face protection.
If swallowed: Call a poison center/docted	or if you feel unwell.
If on skin: Wash with plenty of water.	
If in eyes: Rinse cautiously with water f	or several minutes. Remove contact lenses, if present and easy to do. Continue
rinsing.	
Immediately call a poison center/doctor.	
IF exposed or concerned: Get medical a	
Specific treatment (see on this label).	
Get medical advice/attention if you feel	unwell.
Rinse mouth.	
Take off contaminated clothing and was	h it before reuse.
If skin irritation or rash occurs: Get med	
Wash contaminated clothing before reu	
Store locked up.	
	ance with local/regional/national/international regulations.
	Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H225 Highly flammable liquid and vapor.
H227 Combustible liquid.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.

HS

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H318 Causes serious eye damage.	
H319 Causes serious eye irritation.	
H335 May cause respiratory irritation.	
H336 May cause drowsiness or dizziness.	
H351 Suspected of causing cancer.	
H360 May damage fertility or the unborn child.	
H361 Suspected of damaging fertility or the unborn child.	
H373 May cause damage to organs through prolonged or repeated exposure.	
Contact:	
Date of preparation / last revision 12/13/2023	
Abbreviations and acronyms:	
IMDG: International Maritime Code for Dangerous Goods	
DOT: US Department of Transportation	
IATA: International Air Transport Association	
EINECS: European Inventory of Existing Commercial Chemical Substances	
ELINCS: European List of Notified Chemical Substances	
CAS: Chemical Abstracts Service (division of the American Chemical Society)	
LC50: Lethal concentration, 50 percent	
LD50: Lethal dose, 50 percent	
PBT: Persistent, Bioaccumulative and Toxic	
vPvB: very Persistent and very Bioaccumulative	
NIOSH: National Institute for Occupational Safety	
OSHA: Occupational Safety & Health	
TLV: Threshold Limit Value	
PEL: Permissible Exposure Limit	
REL: Recommended Exposure Limit	
BEI: Biological Exposure Limit	
Flammable Liquids 2: Flammable liquids – Category 2	
Flammable Liquids 4: Flammable liquids – Category 4	
Acute Toxicity - Oral 4: Acute toxicity – Category 4	
Skin Corrosion 1C: Skin corrosion/irritation – Category 1C	
Skin Irritation 2: Skin corrosion/irritation – Category 2	
Eye Damage 1: Serious eye damage/eye irritation – Category 1	
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A	
Sensitization - Skin 1: Skin sensitisation - Category 1	
Sensitization - Skin 1A: Skin sensitisation – Category 1A	
Sensitization - Skin 1B: Skin sensitisation – Category 1B	
Carcinogenicity 2: Carcinogenicity – Category 2	
Toxic to Reproduction 1B: Reproductive toxicity – Category 1B	
Toxic to Reproduction 2: Reproductive toxicity – Category 2	
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3	
Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) - Category 2	
Aspiration Hazard 1: Aspiration hazard – Category 1	
* Data compared to the previous version altered.	
-	