

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/02/2022

Reviewed on 06/02/2022

1 Identification

- **Product identifier**
- **Trade name: ST-Varnish**
- **Article number: Series 540-05**
- **Application of the substance / the mixture** Printing inks
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
DECO TECHnology Group Inc.
PRINTCOLOR SCREEN AG
TEL (714) 639-3326
FAX (714) 639-2261
- **Information department:** Product safety department
- **Emergency telephone number:** 800-535-5053

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Toxic to Reproduction 2

H361 Suspected of damaging fertility or the unborn child.



GHS07

Skin Irritation 2

H315 Causes skin irritation.

Eye Irritation 2A

H319 Causes serious eye irritation.

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure 3

H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Warning

- **Hazard-determining components of labeling:**

hexamethylene diacrylate

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

dipentaerythritol hexaacrylate

pentaerythritol tetraacrylate

propylidynetrimethanol, ethoxylated, esters with acrylic acid

glycerol, propoxylated, esters with acrylic acid

4,4'-isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid

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Hazard statements

- Causes skin irritation.
- Causes serious eye irritation.
- May cause an allergic skin reaction.
- Suspected of damaging fertility or the unborn child.
- May cause respiratory irritation.

Precautionary statements

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Avoid breathing vapours.
- Wash thoroughly after handling.
- Contaminated work clothing must not be allowed out of the workplace.
- Wear protective gloves / eye protection.
- Use personal protective equipment as required.
- If on skin: Wash with plenty of water.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF exposed or concerned: Get medical advice/attention.
- Specific treatment (see on this label).
- Call a poison center/doctor if you feel unwell.
- Take off contaminated clothing and wash it before reuse.
- If skin irritation or rash occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- Wash contaminated clothing before reuse.
- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)



Health = 2
Fire = 1
Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 2
Fire = 1
Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

- PBT:** Not applicable.
- vPvB:** Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures

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

Dangerous components:

CAS: 5888-33-5	exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	≥10-<20%
CAS: 13048-33-4	hexamethylene diacrylate	10-25%
CAS: 29570-58-9	dipentaerythritol hexaacrylate	10-25%
CAS: 63225-53-6	2-[[[(butylamino)carbonyl]oxy]ethyl acrylate	≥10-<20%
CAS: 7473-98-5	2-hydroxy-2-methylpropiophenone	2.5-10%

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CAS: 75980-60-8	diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide	2.5-10%
CAS: 4986-89-4	pentaerythritol tetraacrylate	≥1-≤2.5%
CAS: 4394-85-8	4-morpholinecarbaldehyde	≥0.1-<1%
CAS: 28961-43-5	propylidynetrimehanol, ethoxylated, esters with acrylic acid	≥0.1-<1%
CAS: 52408-84-1	glycerol, propoxylated, esters with acrylic acid	≥0.1-<0.5%
CAS: 55818-57-0	4,4'-isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid	≥0.1-<0.5%

4 First-aid measures

· **Description of first aid measures**

· **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. If symptoms persist, consult a doctor.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for 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:** Wear self-contained respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.

· **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

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).

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.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

CAS: 13048-33-4	hexamethylene diacrylate	3 mg/m ³
CAS: 7631-86-9	silicon dioxide, chemically prepared	18 mg/m ³
CAS: 96-48-0	4-Hydroxybutanoic acid lactone	3.6 mg/m ³
CAS: 120-51-4	Benzyl benzoate	5.7 mg/m ³
CAS: 1344-28-1	aluminium oxide	15 mg/m ³

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CAS: 7447-41-8	lithium chloride	2.3 mg/m ³
CAS: 150-76-5	mequinol	15 mg/m ³
· PAC-2:		
CAS: 13048-33-4	hexamethylene diacrylate	170 mg/m ³
CAS: 7631-86-9	silicon dioxide, chemically prepared	740 mg/m ³
CAS: 96-48-0	4-Hydroxybutanoic acid lactone	39 mg/m ³
CAS: 120-51-4	Benzyl benzoate	63 mg/m ³
CAS: 1344-28-1	aluminium oxide	170 mg/m ³
CAS: 7447-41-8	lithium chloride	25 mg/m ³
CAS: 150-76-5	mequinol	49 mg/m ³
· PAC-3:		
CAS: 13048-33-4	hexamethylene diacrylate	990 mg/m ³
CAS: 7631-86-9	silicon dioxide, chemically prepared	4,500 mg/m ³
CAS: 96-48-0	4-Hydroxybutanoic acid lactone	310 mg/m ³
CAS: 120-51-4	Benzyl benzoate	380 mg/m ³
CAS: 1344-28-1	aluminium oxide	990 mg/m ³
CAS: 7447-41-8	lithium chloride	150 mg/m ³
CAS: 150-76-5	mequinol	320 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Keep away from heat and direct sunlight.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** Store away from oxidizing agents.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from exposure to the light.
- **Storage class:** 10
- **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 item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

CAS: 13048-33-4 hexamethylene diacrylate

WEEL	Long-term value: 1 mg/m ³
	DSEN

- **Additional information:** The lists that were valid during the creation were used as basis.

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- **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.
Avoid contact with the eyes and skin.
- **Breathing equipment:** Not necessary if room is well-ventilated.
- **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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
- **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Fluid
Color:	According to product specification
- **Odor:** Characteristic
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	90 °C (194 °F)
- **Flash point:** >100 °C (>212 °F) (Abel Pensky)
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:** 235 °C (455 °F)

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· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 50 °C (122 °F):	0 hPa
· Density at 20 °C (68 °F):	1.09 g/cm ³ (9.1 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C (68 °F):	2,800 mPas
Kinematic:	Not determined.
· Solvent separation test	
VOC content:	0.71 % 7.8 g/l / 0.06 lb/gal
VOC (EC)	0.71 %
· 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**
Reacts with strong oxidizing agents.
Photoreactive.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

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· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

CAS: 7631-86-9	silicon dioxide, chemically prepared	3
CAS: 96-48-0	4-Hydroxybutanoic acid lactone	3
CAS: 128-37-0	Butylated hydroxytoluene	3

· **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.

· **Ecotoxicological effects:**

· **Remark:** Harmful to fish

· **Additional ecological information:**

· **General notes:**

Harmful to aquatic organisms

Water hazard class 2 (Self-assessment): hazardous for water

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

Danger to drinking water if even small quantities leak into the ground.

· **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.

14 Transport information

· **UN-Number**

· **DOT**

· **ADR, IMDG, IATA**

Void

UN3082

· **UN proper shipping name**

· **DOT**

Void

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· ADR	Not restricted good <= 5 Kg/L according to SV 375 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, hexamethylene diacrylate)
· IMDG	Not restricted good <= 5 Kg/L according to 2.10.2.7 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, hexamethylene diacrylate), MARINE POLLUTANT
· IATA	Not restricted good <= 5 Kg/L according to SP A197 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, hexamethylene diacrylate)

· **Transport hazard class(es)**

· **DOT**
· **Class** Void

· **ADR**



· **Class** 9 Miscellaneous dangerous substances and articles
· **Label** 9

· **IMDG, IATA**



· **Class** 9 Miscellaneous dangerous substances and articles
Not restricted good
· **Label** 9

· **Packing group**

· **DOT** Void
· **ADR, IMDG, IATA** III

· **Environmental hazards:**

· **Marine pollutant:** No
Yes
Symbol (fish and tree)
· **Special marking (ADR):** 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 code):** 90
· **EMS Number:** F-A,S-F
· **Stowage Category** A

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

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· Transport/Additional information:

· ADR

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· IMDG

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· UN "Model Regulation":

UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EXO-1,7,7-TRIMETHYLBICYCLO[2.2.1]HEPT-2-YL 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 ingredient is listed.

· Section 313 (Specific toxic chemical listings):

CAS: 1344-28-1 | aluminium oxide

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Cancerogenity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value)

CAS: 128-37-0 | Butylated hydroxytoluene

A4

CAS: 1344-28-1 | aluminium oxide

A4

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· GHS label elements

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

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· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**

hexamethylene diacrylate
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
dipentaerythritol hexaacrylate
pentaerythritol tetraacrylate
propylidynetrimethanol, ethoxylated, esters with acrylic acid
glycerol, propoxylated, esters with acrylic acid
4,4'-isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid

· **Hazard statements**

Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
May cause respiratory irritation.

· **Precautionary statements**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing vapours.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves / eye protection.
Use personal protective equipment as required.
If on skin: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
Call a poison center/doctor if you feel unwell.
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Wash contaminated clothing before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical 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.

· **Department issuing SDS:** Product safety department

· **Contact:** hse@printcolor.ch

· **Date of preparation / last revision** 06/02/2022 / 2

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
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
Skin Irritation 2: Skin corrosion/irritation – Category 2
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Sensitization - Skin 1: Skin sensitisation – Category 1
Toxic to Reproduction 2: Reproductive toxicity – Category 2
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

US