DURATEC COATING VOC

1904-045

CLEAR VINYLESTER HI-GLOSS TOPCOAT

The Composites Fabricators Association in association with the EPA conducted a study of styrene emissions from open mold composite manufacturing. Styrene monomer is a volatile liquid that will react to form a non-volatile copolymer with unsaturated polyester resins. The value to determine is thus the amount of material lost prior to the completion of the reaction. The data gathered in this study is the actual measurement of emissions based on the percent styrene in the coating and the application method chosen. It was shown that the non-atomizing applications (such as brushing or roll coating) emit much less than the atomizing application (spraying). Using the data from this study, a Unified Emissions Factor (UEF) table was prepared.

Dura Technologies, Inc. considers this to be the best available science for calculating the emissions of coatings containing styrene monomer. We will therefore report three distinct VOC numbers. The VOC reported in section III of the MSDS is based on 100% evaporation of the styrene. This attachment will report the VOC calculated using the UEF factors for atomized application and non-atomized application.

ATOMIZED APPLICATION

COATING VOC: 2.014 LB/GAL (241.3 GR/LITER)
MATERIAL VOC: 2.014 LB/GAL (241.3 GR/LITER)

NON-ATOMIZED APPLICATION

COATING VOC: 1.19 LB/GAL (142.4 GR/LITER)
MATERIAL VOC: 1.19 LB/GAL (142.4 GR/LITER)

For some applications, this product may not be compliant if applied using atomizing techniques. Please consult the AQMD rule that applies to you operation and determine which application method will comply.

CLEAR VINYLESTER HI-GLOSS TOPCOAT

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Trade name : CLEAR VINYLESTER HI-GLOSS TOPCOAT

CAS No : mixture

Product code : 1904-045

Formula : na

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : TOOLING TOPCOAT

1.3. Details of the supplier of the safety data sheet

Dura Technologies, Inc.
2720 South Willow Avenue #A
Bloomington, CA 92316

909.877.8477
ChemTrec US: 800.424.9300
ChemTrec Int: +1 70 3527 3887

1.4. Emergency telephone number

Emergency number : ChemTrec US: 800.424.9300 Int: +1 70 3527 3887
CHEMTREC: 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 3 H226
Skin Irrit. 2 H315
Eye Irrit. 2A H319
Carc. 2 H351
Repr. 2 H361
STOT SE 3 H335
STOT RE 1 H372

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS02 GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer
H361 - Suspected of damaging fertility or the unborn child
H372 - Causes damage to organs (hearing sense) through prolonged or repeated exposure

Precautionary statements (GHS-US) :
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P260 - Do not breathe dust, mist, fume, spray, vapors
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash EXPOSED AREA. thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area

P280 - Wear eye protection, protective clothing, protective gloves
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - IF exposed or concerned: Get medical advice/attention
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P314 - Get medical advice and attention if you feel unwell
P321 - Specific treatment (see SEEK MEDICAL AID. on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash it before reuse
P370+P378 - In case of fire: Use carbon dioxide (CO2), dry chemical powder, foam to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container to LOCAL, STATE, AND NATIONAL REGULATIONS.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Unsaturated VINYL ESTER Resin	(CAS No) TRADE SECRET	<= 59.5	Not classified
styrene, inhibited	(CAS No) 100-42-5	<= 40	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 Repr. 2, H361 STOT SE 3, H335 STOT RE 1, H372
cobalt(II) 2-ethylhexanoate	(CAS No) 136-52-7	<= 0.5	Carc. 2, H351

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. Suspected of causing cancer. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: wash throughly for five minutes. seek medical attention. Get medical advice/attention. Specific treatment (see seek medical attention. on this label).

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: SEEK IMMEDIATE MEDICAL ATTENTION. Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : May cause genetic defects (avoid skin contact and inhalation.). May cause cancer (avoid skin contact and inhalation.). Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

Symptoms/injuries after inhalation	:	Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	:	Causes skin irritation.
Symptoms/injuries after eye contact	:	Causes serious eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	:	Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	Highly flammable liquid and vapor. Flammable liquid and vapor.
Explosion hazard	:	May form flammable/explosive vapor-air mixture.
Reactivity	:	No reactivity hazard other than the effects described in sub-sections below.

5.3. Advice for firefighters

Firefighting instructions	:	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	:	Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Protective equipment	:	Gloves. Protective goggles. Protective clothing.
Emergency procedures	:	Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	:	Equip cleanup crew with proper protection.
Emergency procedures	:	Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	:	Dam up the liquid spill. Contain released substance, pump into suitable containers.
Methods for cleaning up	:	Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Avoid breathing DUST, FUMES, MIST, OR VAPORS. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray.
Hygiene measures	:	Wash HANDS thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. equipment.

Storage conditions	:	Keep only in the original container in a cool, well ventilated place away from : HEAT SPARKS OR OPEN FLAMES. Keep in fireproof place. Keep container tightly closed.
Incompatible products	:	Strong bases. Strong acids.
Incompatible materials	:	Sources of ignition. Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

styrene, inhibited (100-42-5)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA ACGIH	ACGIH STEL (ppm)	20 ppm

8.2. Exposure controls

Appropriate engineering controls	:	Ensure exposure is below occupational exposure limits (where available).
Personal protective equipment	:	Avoid all unnecessary exposure.
Hand protection	:	Wear protective gloves.
Eye protection	:	Chemical goggles or safety glasses.
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	Wear appropriate mask.
Other information	:	Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Colourless to light yellow.
Odor	:	characteristic.
Odor threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	146.1 (≥ 64) °C
Flash point	:	32.2 (30 - 34) °C
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	≥ 1.1
Solubility	:	No data available
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Polymerization can result in formation of solid deposits, even in vapour space. Not established. Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture. Flammable liquid and vapor.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

CLEAR VE TOOLING TOPCOAT (\f)mixture	
ATE CLP (vapors)	11.000 mg/l/4h

styrene, inhibited (100-42-5)	
LD50 oral rat	5000 mg/kg (Rat; Literature study; >6000 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rat	2820 mg/kg (Rat; Literature study; OECD 402: Acute Dermal Toxicity; >2000 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	5010 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	12 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	2770 ppm/4h (Rat; Literature study)
ATE CLP (oral)	5000.000 mg/kg body weight
ATE CLP (dermal)	2820.000 mg/kg body weight
ATE CLP (gases)	2770.000 ppmV/4h
ATE CLP (vapors)	12.000 mg/l/4h
ATE CLP (dust, mist)	12.000 mg/l/4h

cobalt(II) 2-ethylhexanoate (136-52-7)	
LD50 oral rat	3129 mg/kg body weight (Rat; OECD 425: Acute Oral Toxicity: Up-and-Down Procedure; Experimental value)
LD50 dermal rat	> 2000 mg/kg body weight (Rat; Weight of evidence; OECD 402: Acute Dermal Toxicity)
ATE CLP (oral)	3129.000 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Suspected of causing cancer.

styrene, inhibited (100-42-5)	
IARC group	2B - Possibly carcinogenic to humans

cobalt(II) 2-ethylhexanoate (136-52-7)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Causes damage to organs (hearing sense) through prolonged or repeated exposure.
Based on available data, the classification criteria are not met
Causes damage to organs through prolonged or repeated exposure

Aspiration hazard	:	Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	:	Harmful if inhaled. Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	:	Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	:	Causes skin irritation.
Symptoms/injuries after eye contact	:	Causes serious eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

styrene, inhibited (100-42-5)	
LC50 fish 1	25 mg/l (96 h; Lepomis macrochirus; GLP)
LC50 other aquatic organisms 1	10 - 100 mg/l (96 h)
EC50 Daphnia 1	23 mg/l (48 h; Daphnia magna; Locomotor effect)
LC50 fish 2	32 mg/l (96 h; Pimephales promelas)
EC50 Daphnia 2	27 mg/l (24 h; Daphnia magna; GLP)
TLM fish 1	25.1 mg/l (96 h; Lepomis macrochirus; Soft water)
TLM fish 2	46.4 mg/l (96 h; Pimephales promelas; Soft water)
TLM other aquatic organisms 1	10 - 100,96 h
Threshold limit other aquatic organisms 1	10 - 100,96 h; Pseudomonas putida
Threshold limit other aquatic organisms 2	72 mg/l
Threshold limit algae 1	> 200 mg/l (192 h; Scenedesmus quadricauda; Inhibitory)
Threshold limit algae 2	67 mg/l (Microcystis aeruginosa; Inhibitory)

cobalt(II) 2-ethylhexanoate (136-52-7)	
LC50 fish 1	54.1 mg/l (96 h; Pimephales promelas)
EC50 Daphnia 1	2618 µg/l (48 h)
Threshold limit algae 1	24.1 µg/l (7 days)
Threshold limit algae 2	90.1 µg/l (7 days; Lemna minor; Growth rate)

12.2. Persistence and degradability

CLEAR VE TOOLING TOPCOAT (mixture)	
Persistence and degradability	Not established.

styrene, inhibited (100-42-5)	
Persistence and degradability	Readily biodegradable in water. Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil. Photodegradation in the air. Not established.
Chemical oxygen demand (COD)	2.80 g O^2/g substance
ThOD	3.07 g O^2/g substance
BOD (% of ThOD)	0.42 % ThOD

cobalt(II) 2-ethylhexanoate (136-52-7)	
Persistence and degradability	Biodegradability in water: no data available.

Unsaturated VINYL ESTER Resin (TRADE SECRET)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

CLEAR VE TOOLING TOPCOAT (mixture)	
Bioaccumulative potential	Not established.

styrene, inhibited (100-42-5)	
BCF fish 1	35.5 (Carassius auratus)
BCF other aquatic organisms 1	74
Log Pow	2.96 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500). Not established.

cobalt(II) 2-ethylhexanoate (136-52-7)	
Bioaccumulative potential	No bioaccumulation data available.

Unsaturated VINYL ESTER Resin (TRADE SECRET)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

styrene, inhibited (100-42-5)	
Surface tension	0.032 N/m (19 °C)

cobalt(II) 2-ethylhexanoate (136-52-7)	
Surface tension	0.064 N/m (20 °C; 1 g/l)

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to approved disposal site.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

UN-No.(DOT) : UN1866

Proper Shipping Name (DOT) : RESIN SOLUTION

Transport hazard class(es) (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid

Packing group (DOT) : III - Minor Danger

Additional information

Other information : No supplementary information available.

ADR

Transport document description : UN 1866, 3, III, (D/E)

Packing group (ADR) : III

Class (ADR) : 3 - Flammable liquid

Hazard identification number (Kemler No.) : 33

Classification code (ADR) : F1

Hazard labels (ADR) : 3 - Flammable liquids

Orange plates :

Tunnel restriction code : D/E

LQ : 5l

Excepted quantities (ADR) : E2

Transport by sea

UN-No. (IMDG)	:	1866
Proper Shipping Name (IMDG)	:	RESIN SOLUTION
Class (IMDG)	:	3 - Flammable liquids
Packing group (IMDG)	:	III - substances presenting low danger

Air transport

UN-No. (IATA)	:	1866
Proper Shipping Name (IATA)	:	RESIN SOLUTION
Class (IATA)	:	3 - Flammable Liquids
Packing group (IATA)	:	III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

styrene, inhibited (100-42-5)	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Reactive hazard Fire hazard Delayed (chronic) health hazard

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 3	H226
Acute Tox. 4 (Inhalation:vapour)	H332
Skin Irrit. 2	H315
Eye Irrit. 2	H319
Muta. 1B	H340
Carc. 2	H351
Repr. 2	H361
STOT RE 2	H373

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.2; R45
Muta.Cat.2; R46
F; R11
Xn; R20
Xi; R36/38

Full text of R-phrases: see section 16

15.2.2. National regulations

styrene, inhibited (100-42-5)
Listed on EPA's Hazardous Air Pollutants (HAPS)

15.3. US State regulations

styrene, inhibited (100-42-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)

styrene, inhibited (100-42-5)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

Other information : None.

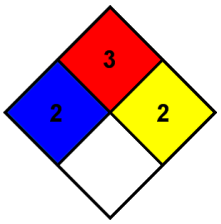
Full text of H-phrases: see section 16:

Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
Carc. 2	Carcinogenicity Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 3	Flammable liquids Category 3
Repr. 2	Reproductive toxicity Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H226	Flammable liquid and vapor
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity : 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 3 Serious Hazard

Physical : 1 Slight Hazard

Personal Protection : H

SDS US (GHS HazCom 2012)

To the best of our knowledge this SDS is accurate. The the extent allowed by law, this statement is made in lieu of an other warranties, expressed or implied including but not limited to any implied warranty of merchantability or fitness for a particular purpose and is in lieu of any other obligations or liability on the part of Dura Technoligies, Inc.