

1 Identification

- **Product identifier**
- **Trade name:** Virent BioForm® Aromatic 100 solvent
- **Article number:** C0501D
- **Relevant identified uses of the substance or mixture and uses advised against**
 No further relevant information available.
- **Application of the substance / the mixture**
 This material is only to be used for research and development, under the direct supervision of a technically qualified person. The toxicological properties have not been thoroughly investigated.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Virent, Inc.
 3571 Anderson Street
 Madison, WI USA 53704
- **Information department:** Product safety department: dave_runnels@virent.com
- **Emergency telephone number:**
 For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident, Call CHEMTREC (Day or Night)
 CHEMTREC: NORTH AMERICA: 800-424-9300
 CHEMTREC: INTERNATIONAL: CALL 703-527-3887 (collect calls accepted)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS09 Environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4	H332	Harmful if inhaled.
Skin Irrit. 2	H315	Causes skin irritation.
Eye Irrit. 2A	H319	Causes serious eye irritation.
STOT SE 3	H335-H336	May cause respiratory irritation. May cause drowsiness or dizziness.

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



GHS02



GHS07



GHS09

- **Signal word** Warning

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

Trimethylbenzene

· **Hazard statements**

- H226 Flammable liquid and vapor.
- H332 Harmful if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.
- H411 Toxic to aquatic life with long lasting effects.

· **Precautionary statements**

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P280 Wear protective gloves / eye protection / face protection.
- P240 Ground/bond container and receiving equipment.
- P242 Use only non-sparking tools.
- P273 Avoid release to the environment.
- P243 Take precautionary measures against static discharge.
- P264 Wash thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P303+P361+P353 **IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P305+P351+P338 **If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P321 Specific treatment (see on this label).
- P304+P340 **IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312 Call a poison center/doctor if you feel unwell.
- P332+P313 **If skin irritation occurs:** Get medical advice/attention.
- P337+P313 **If eye irritation persists:** Get medical advice/attention.
- P370+P378 **In case of fire:** Use for extinction: CO2, powder or water spray.
- P391 Collect spillage.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P405 Store locked up.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Hazards Not Otherwise Classified None**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

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· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

Description: Solvent Naphtha (Renewable), Light Aromatic including the substances listed below:

· **CAS No. Description**

25551-13-7 Trimethylbenzene

· **Chemical characterization: Mixtures**

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

· **Components:**

25551-13-7	Trimethylbenzene ⚠ Flam. Liq. 3, H226; ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335-H336; Aquatic Acute 2, H401	>95%
71-43-2	benzene ⚠ Flam. Liq. 2, H225; ⚠ Muta. 1B, H340; Carc. 1A, H350; STOT RE 1, H372; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	<0.05%

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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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:** CO₂, sand, extinguishing powder. Do not use water.

· **For safety reasons unsuitable extinguishing agents:** Water

· **Special hazards arising from the substance or mixture** No further relevant information available.

· **Advice for firefighters**

· **Protective equipment:** Mouth respiratory protective device.

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
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 item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **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 ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
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.
Protect from heat and direct sunlight.
- **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 product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **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.
Store protective clothing separately.
Avoid contact with the eyes and skin.
- **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

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Color:	Clear
Odor:	Petrol-like
Odour threshold:	Not determined.

· **pH-value:** Not determined.

· Change in condition

Melting point/Melting range:	<-40 °C (<-40 °F)
Boiling point/Boiling range:	>155 °C (>311 °F)

· **Flash point:** >38 °C (>100 °F)

· **Flammability (solid, gaseous):** Not applicable.

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· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not determined.
· Density at 20 °C (68 °F):	0.84-0.89 g/cm ³ (7.01-7.427 lbs/gal)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not Determined
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C (68 °F):	0.5-1.5 mPas
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	Not tested
VOC content:	0.5 g/l / 0.00 lb/gl
· 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.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
25551-13-7 Trimethylbenzene		
Oral	LD50	8970 mg/kg (rat)
Inhalative	LC50/4 h	11 mg/l (ATE)
71-43-2 benzene		
Oral	LD50	4894 mg/kg (rat)

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Dermal	LD50	48 mg/kg (mouse)
Inhalative	LC50/4 h	9980 mg/l (mouse)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
Carcinogenic.
The product can cause inheritable damage.
- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
71-43-2	benzene	I

- **NTP (National Toxicology Program)**

71-43-2	benzene	K
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- **OSHA-Ca (Occupational Safety & Health Administration)**

71-43-2	benzene	
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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:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
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.





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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number · DOT, ADR, IMDG, IATA	UN1268
· UN proper shipping name · DOT · ADR · IMDG, IATA	Petroleum distillates, n.o.s. 1268 Petroleum distillates, n.o.s. solution, ENVIRONMENTALLY HAZARDOUS PETROLEUM DISTILLATES, N.O.S.
· Transport hazard class(es) · DOT	
	
· Class · Label	3 Flammable liquids 3
· ADR	
 	
· Class · Label	3 Flammable liquids 3
· IMDG, IATA	
	
· Class · Label	3 Flammable liquids 3
· Packing group · DOT, ADR, IMDG, IATA	III
· Environmental hazards: · Marine pollutant: · Special marking (ADR):	No Symbol (fish and tree)
· Special precautions for user · Danger code (Kemler): · EMS Number:	Warning: Flammable liquids 30 F-E,S-E
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

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· Transport/Additional information:
· DOT
· Quantity limitations
On passenger aircraft/rail: 60 L
On cargo aircraft only: 220 L
· 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":
UN1268, Petroleum distillates, n.o.s. solution, ENVIRONMENTALLY HAZARDOUS, 3, III
15 Regulatory information
· Safety, health and environmental regulations/legislation specific for the substance or mixture
· Sara
· Section 355 (extremely hazardous substances):
None of the ingredients is listed.
· Section 313 (Specific toxic chemical listings):

71-43-2 benzene

· TSCA (Toxic Substances Control Act):
All ingredients are listed.
· Proposition 65
· Chemicals known to cause cancer:

71-43-2 benzene

· Chemicals known to cause reproductive toxicity for females:
Sample not tested
· Chemicals known to cause reproductive toxicity for males:

71-43-2 benzene

· Chemicals known to cause developmental toxicity:

71-43-2 benzene

· Cancerogenity categories
· EPA (Environmental Protection Agency)

71-43-2 benzene

A, K/L

· TLV (Threshold Limit Value established by ACGIH)

71-43-2 benzene

AI

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

71-43-2 benzene

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

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Trade name: Virent BioForm® Aromatic 100 solvent

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 · **Hazard pictograms**


GHS02 GHS07 GHS09

 · **Signal word** Warning

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

Trimethylbenzene

 · **Hazard statements**

 H226 *Flammable liquid and vapor.*

 H332 *Harmful if inhaled.*

 H315 *Causes skin irritation.*

 H319 *Causes serious eye irritation.*

 H335-H336 *May cause respiratory irritation. May cause drowsiness or dizziness.*

 H411 *Toxic to aquatic life with long lasting effects.*

 · **Precautionary statements**

 P210 *Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

 P241 *Use explosion-proof electrical/ventilating/lighting/equipment.*

 P261 *Avoid breathing dust/fume/gas/mist/vapors/spray*

 P280 *Wear protective gloves / eye protection / face protection.*

 P240 *Ground/bond container and receiving equipment.*

 P242 *Use only non-sparking tools.*

 P273 *Avoid release to the environment.*

 P243 *Take precautionary measures against static discharge.*

 P264 *Wash thoroughly after handling.*

 P271 *Use only outdoors or in a well-ventilated area.*

 P303+P361+P353 *IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

 P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

 P321 *Specific treatment (see on this label).*

 P304+P340 *IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*

 P312 *Call a poison center/doctor if you feel unwell.*

 P332+P313 *If skin irritation occurs: Get medical advice/attention.*

 P337+P313 *If eye irritation persists: Get medical advice/attention.*

 P370+P378 *In case of fire: Use for extinction: CO2, powder or water spray.*

 P391 *Collect spillage.*

 P362+P364 *Take off contaminated clothing and wash it before reuse.*

 P405 *Store locked up.*

 P403+P233 *Store in a well-ventilated place. Keep container tightly closed.*

 P403+P235 *Store in a well-ventilated place. Keep cool.*

 P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

 · **National regulations:**

 · **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

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Safety Data Sheet

acc. to OSHA HCS

Printing date 01/05/2016

Reviewed on 01/05/2016

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· **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.

· **Date of preparation / last revision** 01/05/2016 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids, Hazard Category 2

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Muta. 1B: Germ cell mutagenicity, Hazard Category 1B

Carc. 1A: Carcinogenicity, Hazard Category 1A

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

Asp. Tox. 1: Aspiration hazard, Hazard Category 1

Aquatic Acute 2: Hazardous to the aquatic environment - Acute Hazard, Category 2

Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

US