



SAFETY DATA SHEET

FortiSolve

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name FortiSolve

Recommended use of the chemical and restrictions on use

Application Solvent

Uses advised against No specific uses advised against are identified

Details of the supplier of the safety data sheet

Manufacturer FortiSystems
16601 Central Green Bld., Ste. 100
Houston, TX 77032 USA
T: 833.840.2777

Emergency telephone number

Emergency telephone 832.922.2926

2. Hazard(s) identification

Classification of the substance or mixture

Label elements

Pictogram



Signal word

Danger

Hazard Statements

H226 Combustible Liquid. (N. America); Flammable Liquid & Vapor (Elsewhere)

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H320 Causes eye irritation.

H335 may cause respiratory irritation. (Cat: 3)

H402 Harmful to aquatic life.

Precautionary statements

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

P264 Wash with soap & water thoroughly after handling.

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

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

P302+352 IF ON SKIN: Wash with soap & water.

P304+340 IF INHALED: Remove victim to fresh air & keep at rest in a position comfortable for breathing.

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses if present & easy to do - Continue rinsing.

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P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P332+313 If skin irritation occurs, get medical advice/attention.

P337+313 If eye irritation persists, get medical advice/attention.

P361 Remove/Take off immediately all contaminated clothing.

P363 Wash contaminated clothing before reuse.

3. Composition/information on ingredients

Mixtures

Odorless Mineral Spirits CAS number: 64742-48-9	50-<99%
Dimethyl Glutarate CAS number: 1119-40-0	1 - <35%
Dimethyl Succinate CAS number: 106-65-0	0 - <14%
Dimethyl Adipate CAS number: 627-93-0	0 - <8%

Composition comments

The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200

4. First-aid measures

Description of first aid measures

General information	First aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists, refer to Section 8 for specific personal protective equipment.
Inhalation	After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR). Seek immediate medical attention.
Ingestion	If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, give two glasses of water to drink. DO NOT INDUCE VOMITING. Never induce vomiting or give liquids to someone who is unconscious, having convulsions, or unable to swallow. Seek immediate medical attention.
Skin contact	If the product contaminates the skin, immediately begin decontamination with running water. <u>Minimum</u> flushing is for 15 minutes. Remove contaminated clothing, taking care not to contaminate eyes. If skin becomes irritated and irritation persists, medical attention may be necessary. Wash contaminated clothing before reuse, discard contaminated shoes.
Eye contact	If this product enters the eyes, open eyes while under gently running water. Use sufficient force to open eyelids. "Roll" eyes to expose more surface. <u>Minimum</u> flushing is for 15 minutes. Seek medical attention.

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Notes to Physician

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (such as: Gastric lavage after endotracheal intubation).

5. Fire-fighting measures

Special hazards arising from the substance or mixture

Fire & Explosion Preventive Measures NO open flames, NO sparks, & NO smoking. Above flash point, use a closed system, ventilation, explosion-proof electrical equipment, lighting.

Extinguishing media

Suitable extinguishing media Use dry powder, AFFF, carbon dioxide.

Advice for firefighters

Special fire fighting procedures Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used. Do not enter confined fire-space without full bunker gear. (Helmet with face shield, bunker coats, gloves & rubber boots).

Unusual Explosion and fire procedures COMBUSTIBLE! Isolate from oxidizers, heat, & open flame. Closed containers may explode if exposed to extreme heat. Applying to hot surfaces requires special precautions. Empty container very hazardous! Continue all label precautions!

6. Accidental release measures

Spill and leak response and environmental precautions

Spill and leak response and environmental precautions Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel. ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area).

Personal precautions, protective equipment and emergency procedures

Personal protective equipment The proper personal protective equipment for incidental releases (such as: 1 liter of the product released in a well-ventilated area), use impermeable gloves, they should be Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard-hat, and Self-Contained Breathing Apparatus specific for the material handled, chemically resistant suit and boots, and hard hat. Self-Contained Breathing Apparatus or respirator may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendation.

Environmental precautions

Environmental precautions Stop spill at source. Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material. Close or cap valves and/or block or plug hole in leaking container and transfer to another container. Keep from entering storm sewers and ditches which lead to waterways, and if necessary, call the local fire or police department for immediate emergency assistance.

Methods and material for containment and cleaning up

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Methods for cleaning up

Absorb spilled liquid with polypads or other suitable absorbent materials. If necessary, neutralize using suitable buffering materials, (acid with soda ash or base with phosphoric acid), and test area with litmus paper to confirm neutralization. Clean up with non-combustible absorbent (such as: sand, soil, and so on). Shovel up and place all spill residue in suitable containers. Dispose of at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal (see Section 13 - Disposal Considerations).

7. Handling and storage

Precautions for safe handling

Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Handling

Isolate from oxidizers, heat, & open flame. Use only with adequate ventilation. Avoid breathing of vapor or spray mist. Avoid prolonged or repeated contact with skin. Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Wear goggles, face shield, gloves, apron & footwear impervious to material. Wash clothing before reuse. Avoid free fall of liquid. Ground containers when transferring. Do not flame cut, braze, or weld. Empty container very hazardous! Continue all label precautions!

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities

Storage precautions

Isolate from strong oxidants. Keep container tightly closed & upright when not in use to prevent leakage.

Nonbulk containers

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product.

Tank Car Shipments

Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer's recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment.). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tanks (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

Protective practices during maintenance of contaminated equipment

Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Collect all rinsates and dispose of according to applicable Federal, State, Provincial, or local procedures.

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Empty container warning

Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY BURST AND CAUSE INJURY OR DEATH.**

Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Contains Odorless Mineral Spirits CAS# 64742-48-9 EINECS# 265-200-4 TWA (OSHA) 500 ppm TLV (ACGIH) 100ppm

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.

Respiratory Exposure Controls Maintain airborne contaminant concentrations below exposure limits given above. If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, European Standard EN 149, or applicable State regulations. If adequate ventilation is not available or there is potential for airborne exposure above the exposure limits, a respirator may be worn up to the respirator exposure limitations, check with respirator equipment manufacturer's recommendations/limitations. For a higher level of protection, use positive pressure supplied air respiration protection or Self-Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

Emergency or planned entry into unknown concentrations or IDLH conditions.

Positive pressure, full-face piece Self-Contained Breathing Apparatus; or positive pressure, full-face piece Self-Contained Breathing Apparatus with an auxiliary positive pressure Self-Contained Breathing Apparatus.

Exposure controls

Protective equipment

Ventilation

Local Exhaust: Necessary
Mechanical (General): Necessary
Special: None
Other: None
Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Eye/face protection

Splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

Hand protection

Use gloves chemically resistant to this material. Preferred examples: Butyl rubber, Chlorinated Polyethylene, Polyethylene, Ethyl vinyl alcohol laminate ("EVAL"), Polyvinyl alcohol ("PVA"). Examples of acceptable glove barrier materials include: natural rubber ("latex"), neoprene, Nitrile/butadiene rubber ("nitrile") or ("NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other skin and body protection Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from impervious materials are generally acceptable, depending on the task.

Hygiene measures

Provide readily accessible eye wash stations & safety showers. Wash at end of each shift & before eating, smoking or using the toilet. Remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

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9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Liquid.
Color	Blue.
Odor	Mild. Amine.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling Range (IBP, 50%, Dry Point)	171 191 204 C / 340 376 400 F
Flash Point (Test Method)	52 C / 127 F (TCC)
Evaporation rate (n-Butyl Acetate =1)	0.177
Flammability Classification	Class II
Lower Flammable Limit in Air (% by vol)	0.95
Upper Flammable Limit in Air (% by vol)	6
Vapor pressure (mm of HG) @20C	0.849
Vapor density (air=1)	5.2
Gravity @ 68/68 F / 20/20 C	
Density	0.769
Specific Gravity (water = 1)	0.77
Pounds/Gallon	6.414
Water Solubility	Negligible.
Partition coefficient (n-Octane/Water)	Not available.
Auto-ignition temperature	260 C / 500 F
Decomposition temperature	Not available.
VOCs (>0.044 lbs/sq in)	0.0 vol% / 0.0 g/l / 0.000 lbs/gal
Total VOC's (TVOC)	100.0 Vol% / 770.0 g/L / 6.4 Lbs/Gal
Nonexempt VOC's (CVOC)*	100.0 Vol% / 770.0 g/L / 6.4 Lbs/Gal
Hazardous Air Pollutants (HAPS)	0.0 Wt% / 0.0 g/L / 0.000 Lbs/Gal
Nonexempt VOC Partial Pressure (mm of Hg @ 20C)	0.00
Viscosity @ 20 C (ASTM D445)	Not available.

*using CARB (California Air Resources Board Rules).

10. Stability and reactivity

Stability	Stable under normal conditions.
Conditions to avoid	Isolate from oxidizers, heat, & open flame.
Materials to avoid	Reacts with strong oxidants, causing fire & explosion hazard.
Hazardous decomposition products	Carbon monoxide, Carbon dioxide from burning.

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Hazardous Polymerization

Will not occur.

11. Toxicological information

Acute Hazards

Eye & Skin Contact:

Primary irritation to skin, defatting, dermatitis. Wash thoroughly after handling.

Eye Contact:

Primary irritation to eyes, redness, tearing, blurred vision. Liquid can cause eye irritation.

Inhalation:

Anesthetic. Irritates respiratory tract. Acute overexposure can cause serious nervous system depression. Vapor harmful.

Swallowing:

Harmful or fatal if swallowed. Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea. The symptoms of chemical pneumonitis may not show up for a few days.

Subchronic Hazards/Conditions Aggravated

Persons with severe skin, liver or kidney problems should avoid use.

Chronic Hazards

Cancer, Reproductive and other Chronic Hazards:

This product has no carcinogens listed by IARC, NTP, NIOSH, OSHA or ACGIH, as of this date, greater or equal to 0.1%.

Target Organs: May cause damage to target organs, based on animal data.

Irritancy of Product: This product is irritation to contaminated tissue.

Sensitization to the Product: No component of this product is known as a sensitizer.

Mutagenicity: No known reports of mutagenic effects in humans.

Embryotoxicity: No known reports of embryotoxic effects in humans.

Teratogenicity: No known reports of teratogenic effects in humans.

Reproductive Toxicity: No known reports of reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (such as: within the eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxing is any substance which interferes in any way with the reproductive process.

Mammalian Toxicity Information

No mammalian information is available on this product.

12. Ecological information

All work practices must be aimed at eliminating environmental contamination.

Effect of Material on Plants and Animals

This product may be harmful or fatal to plant and animal life if released into the environment. Refer to Section 11 (Toxicological Information) for further data on the effects of this product's components on test animals.

Effect of Material on Aquatic Life

no aquatic environmental information is available on this product. Environmental effects of the substance have not been investigated adequately.

Mobility in soil

This material is a mobile liquid.

Degradability

This product is nonbiodegradable.

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Accumulation

This product does not accumulate or biomagnify in the environment.

13. Disposal considerations

General information

The generation of waste should be minimized or avoided wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers and liners may retain some product residues. Vapor from some product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Processing, use or contamination may change the waste disposal requirements. Do not dispose of on land, in surface waters, or in storm drains. Waste should be recycled or disposed of in accordance with regulations. Large amounts should be collected for refuse or consigned to licensed hazardous waste haulers for disposal. **ALL DISPOSAL MUST BE IN ACCORDANCE WITH ALL FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS. IF IN DOUBT, CONTACT PROPER AGENCIES. EPA CHARACTERISTIC: D001**

14. Transport information

Marine Pollutant	No.
DOT/TDG Ship Name	Nonbulk: Not regulated Bulk: UN1268, Petroleum Distillates, N.O.S., Combustible liquid, PG-III
Combustible liquid	Not DOT regulated on trucks in containers of <119 gallons.
Drum Label	None (Combustible Liquid)
IATA / ICAO	UN1268, Petroleum Distillates, N.O.S., 3, PG-III
IMO / IMDG	UN1268, Petroleum Distillates, N.O.S., 3, PG-III
Emergency Response Guidebook	Number 128

15. Regulatory information

SARA Section 311/312 Hazards:

Acute Health, Fire

All components of this product are on the TSCA list. This material contains no known products restricted under SARA Title III, Section 313 in amounts greater or equal to 1%

State Regulations:

This product meets requirements of Southern California AQMD Rule 443.1 & Similar Regulations.

California Proposition 65 Carcinogens and Reproductive Toxins

This product contains no chemicals known to the State of California to cause cancer or reproductive toxicity.

International Regulations

The identified components of this product are listed on the chemical inventories of the following countries:

Australia (AICS), Canada (DSL or NDSL), China (IECSC), Europe (EINECS, ELINCS), Japan (METI/CSCL, MHLW/ISHL), South Korea (KECI), New Zealand (NZIoC), Philippines (PICCA), Switzerland (SWISS), Taiwan (NECSI), USA (TSCA).

Canada: Workplace Hazardous Materials Information System (WHMIS)

B3: Combustible Liquid

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D2B: Irritating to skin/eyes.

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all information required by the CPR.

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

Note: Based on information provided by our suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7- 40-10; Date: 2012-08-22).

16. Other information

Hazard ratings	Health (NFPA): 0, Health (HMIS): 1, Flammability: 2, Physical Hazard: 0 (Personal Protection Rating to be supplied by user based on use conditions.) This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.
Employee training	See Section 2 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this SDS) before handling it.
Date of issue/revision	4/2/2018
Previous version	00/00/0000

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