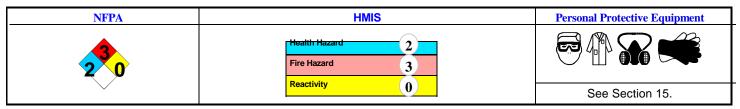




# **Material Safety Data Sheet**



Section 1. Chem	Section 1. Chemical Product and Company Identification Page Number: 1					
Common Name/ Trade Name	Titraton Solvent, Mixture, ASTM	Catalog Number(s).	T1074			
		CAS#	Mixture.			
Manufacturer	SPECTRUM CHEMICAL MFG. CORP.	RTECS	Not applicable.			
	14422 S. SAN PEDRO STREET GARDENA, CA 90248	TSCA	TSCA 8(b) inventory: Toluene; Isopropyl alcohol; Water			
Commercial Name(s)	Not available.	CI#	Not available.			
Synonym	Titration Solvent; 1:1 Toluene-IPA; Isopropyl Alcohol-Toluene (1:1); Toluene-Isopropyl Alcohol (1:1)		EMERGENCY (24hr) 800-424-9300			
Chemical Name	Not applicable.					
Chemical Family	ly Not available.		16-8000			
Chemical Formula	Not applicable.					
Supplier	SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248					

Section 2.Composition and Information on Ingredients							
				Exposure Limits			
Name		CAS #	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )	CEIL (mg/m <sup>3</sup> )	% by Weight	
1) Toluene 2) Isopropyl alcohol 3) Water		108-88-3 67-63-0 7732-18-5	100 980	150 1225		50 49.5 0.5	
Toxicological Data on Ingredients Toluene: ORAL (LD50): Acute: 636 mg/kg [Rat].   DERMAL (LD50): Acute: 8390 mg/kg [Rabbit]. 12124 mg/kg [Rat].   VAPOR (LC50): Acute: 49000 mg/m³ 4 hours [Rat]. 12.5 mg/l 4 hours [Rat]. >26700 ppm 1 hour [Rat]. 30000 mg/m³ 2 hours [Mouse].   Isopropyl alcohol: ORAL (LD50):   ORAL (LD50): Acute: 4396 mg/kg [Rat]. 3600 mg/kg [Mouse]. 6410 mg/kg [Rabbit].							

Acute: 12800 mg/kg [Rabbit]. Acute: 72600 mg/m<sup>3</sup> 4 hours [Rat].

DERMAL (LD50): VAPOR (LC50):

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### Section 3. Hazards Identification

Potential Acute Health Effects	Hazardous in case of skin contact (irritant), of eye contact (irritant), inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Toluene]. Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Isopropyl alcohol]. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, brain, peripheral nervous system, skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

#### Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.					
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.					
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediat medical attention.					
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.					
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.					
Ingestion	If swallowed, do NOT induce vomiting. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Aspiration hazard if swallowed- can enter lungs and cause damage. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention.					
Serious Ingestion	Not available.					

## Section 5. Fire and Explosion Data

Flammability of the Product	Flammable.
Auto-Ignition Temperature	The lowest known value is 399℃ (750.2뚜) (Isopropy I alcohol).
Flash Points	The lowest known value is CLOSED CUP: 4.4444℃ (40° F). (Setaflash). OPEN CUP: 16℃ (60.8年). (Toluene)
Flammable Limits	The greatest known range is LOWER: 2% UPPER: 12.7% (Isopropyl alcohol)
Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances	Explosive in presence of open flames and sparks. Non-explosive in presence of shocks.
Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.
Special Remarks on Fire Hazards	Vapor may travel considerable distance to source of ignition and flash back. CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME. Hydrogen peroxide sharply reduces the autoignition temperature of Isopropyl alcohol. After a delay, Isopropyl alcohol ignites on contact with dioxgenyl tetrafluorborate, chromium trioxide, and potassium tert-butoxide. When heated to decomposition it emits acrid smoke and fumes. (Isopropyl alcohol)
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Special Remarks on Explosion Hazards	Toluene forms explosive reaction with 1,3-dichloro-5,5-dimethyl-2,4-imid concentrated nitric acid, sulfuric acid + nitric acid; N2O4; AgCIO4; B dichloride. Also forms an explosive mixture with tetranitromethane. (Toluene) Secondary alcohols are readily autooxidized in contact with oxygen or peroxide. It can become potentially explosive. It reacts with oxygen to form dangerously unstable peroxides which ca distillation or evaporation. The presence of 2-butanone increases the read Explosive in the form of vapor when exposed to heat or flame. May form e Isopropyl alcohol + phosgene forms isopropyl chloroformate and hydroger In the presence of iron salts, thermal decompositon can occur, whicn in sec A homogeneous mixture of concentrated peroxides + isopropyl alcohol ar heat. Barium perchlorate + isopropyl alcohol gives the highly explosive alkyl per It forms explosive mixtures with trinitormethane and hydrogen peroxide. It produces a violent explosive reaction when heated with aluminum isopro Mixtures of isopropyl alcohol + nitroform are explosive. (Isopropyl alcohol)	arF3; Uranium hexafluoride; sulfu air, forming ketones and hydroger an concentrate and explode during ction rate for peroxide formation. explosive mixtures with air. n chloride. ome cases can become explosive. re capable of detonation by shock o rchlorates.
Section 6. Accidental	Release Measures	
Small Spill	Dilute with water and mop up, or absorb with an inert dry material and pla container.	ace in an appropriate waste disposa
Large Spill	Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if w sand or other non-combustible material. Do not touch spilled material. Pr or confined areas; dike if needed. Eliminate all ignition sources. Be care a concentration level above TLV. Check TLV on the MSDS and with local	revent entry into sewers, basements oful that the product is not present a
Section 7. Handling a	and Storage	
Precautions	Keep away from heat. Keep away from sources of ignition. Ground all eq ingest. Do not breathe gas/fumes/ vapour/spray. In case of insufficient equipment If ingested, seek medical advice immediately and show the c with skin and eyes	ventilation, wear suitable respiratory
Storage	Flammable materials should be stored in a separate safety storage cabin Keep away from sources of ignition. Keep container tightly closed. Keep Ground all equipment containing material. A refrigerated room would be point lower than 37.8°C (100°F).	eep in a cool, well-ventilated place
Section 8. Exposure	Controls/Personal Protection	
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airbo their respective threshold limit value. Ensure that eyewash stations and work-station location.	
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Be sure to use an approv Gloves.	ved/certified respirator or equivalent
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contaused to avoid inhalation of the product. Suggested protective clothing specialist BEFORE handling this product.	
Exposure Limits	Toluene     TWA: 50 (ppm) from ACGIH (TLV) [1995]     TWA: 188 (mg/m³) from ACGIH [1995]     Isopropyl alcohol     TWA: 400 STEL: 500 (ppm) from ACGIH (TLV) [1995]     TWA: 980 STEL: 1230 (mg/m³) from ACGIH [1995]	

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Section 9. Physical a	nd Chemical Properties				
Physical state and appearance	Liquid.	Odor	Not available.		
Molecular Weight	Not applicable.	Taste	Not available.		
pH (1% soln/water)	Not available.	Color	Not available.		
Boiling Point	The lowest known value is 82.5℃ (180.5年) (Is	oprop yl alco	bhol). Weighted average: 96.62℃ (205.9年)		
Melting Point	May start to solidify at -88.5℃ (-127.3뚜) bas (-133.2뚜)	ed o n data	for: Isopropyl alcohol. Weighted average: -91.77°C		
Critical Temperature	The lowest known value is 235°C (455°F) (Isop	oropyl alcoho	ol).		
Specific Gravity	Weighted average: 0.82 (Water = 1)				
Vapor Pressure	The highest known value is 4.4 kPa (@ $20$ °C)	(Isopro pyl al	cohol). Weighted average: 4.1 kPa (@ 20℃)		
Vapor Density	The highest known value is 3.1 (Air = 1) (Tol	uene). Weig	hted average: 2.59 (Air = 1)		
Volatility	100% (w/w). (Isopropyl alcohol.)				
Odor Threshold	The highest known value is 22 ppm (Isopropy	alcohol) We	eighted average: 11.75 ppm		
Water/Oil Dist. Coeff.	The product is equally soluble in oil and water				
Ionicity (in Water)	Not available.				
<b>Dispersion Properties</b>	See solubility in water, methanol, diethyl ether, n-octanol, acetone.				
Solubility	Easily soluble in cold water, hot water, metha	nol, diethyl et	her, n-octanol, acetone.		
Section 10. Stability	and Reactivity Data				
Stability	The product is stable.				
Instability Temperature	Not available.				
Conditions of Instability	Heat, incompatible materials				
Incompatibility with various substances	Reactive with oxidizing agents, acids, alkalis.				
Corrosivity	Non-corrosive in presence of glass.				
Special Remarks on Reactivity	Incompatible with strong oxidizers, silver perchlorate, sodium difluoride, Tetranitromethane, Uranium Hexafluoride. Frozen Bromine Trifluoride reacts violently with Toluene at -80 deg. C. Reacts chemically with nitrogen oxides, or halogens to form nitrotoluene, nitrobenzene, and nitrophenol and halogenated products, respectively. (Toluene) Reacts violently with hydrogen + palladium combination, nitroform, oleum, COCl2, aluminum triisopropoxide, oxidants Incompatible with acetaldehyde, chlorine, ethylene oxide, isocyanates, acids, alkaline earth, alkali metals, caustics, amines, crotonaldehyde, phosgene, ammonia. Isopropyl alcohol reacts with metallic aluminum at high temperatures. Isopropyl alcohol attacks some plastics, rubber, and coatings. Vigorous reaction with sodium dichromate + sulfuric acid. (Isopropyl alcohol)				
Special Remarks on Corrosivity	Not available.				
Polymerization	Will not occur.				

Section 11. Toxicological Information					
Routes of Entry	Eye contact. Inhalation. Ingestion.				
Toxicity to Animals	Acute oral toxicity (LD50): 636 mg/kg [Rat]. (Toluene). Acute dermal toxicity (LD50): 8390 mg/kg [Rabbit]. (Toluene).				
Chronic Effects on Humans	<b>CARCINOGENIC EFFECTS</b> : Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Toluene]. Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Isopropyl alcohol]. May cause damage to the following organs: kidneys, liver, brain, peripheral nervous system, skin, central nervous system (CNS).				
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).				
Special Remarks on Toxicity to Animals	Lowest Published Lethal Dose: LDL [Human] - Route: Oral; Dose: 50 mg/kg LCL [Rabbit] - Route: Inhalation; Dose: 45000 ppm/40min (Toluene)				
Special Remarks on Chronic Effects on Humans	May cause adverse reproductive effects and birth defects (teratogenic). May affect genetic material (mutagenic)				
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes mild to moderate skin irritation. It can be absorbed to some extent through the skin. Eyes: Causes mild to moderate skin irritation with a burning sensation. Splash contact with eyes also causes conjunctivitis, blepharospasm, corneal edema, corneal abraisons. This usually resolves in 2 days. Inhalation: Inhalation of high concentrations may affect behavior and cause central nervous system effects characterized by nausea, headache, dizziness, tremors, restlessness, lightheadeness, exhilaration, memory loss, insomnia, impaired reaction time, drowsiness, atxia, hallucinations, somnolence, muscle contraction or spasticity, unconsciousness and coma. Inhalation of high concentration of vapor may also affect the cardiovascular system (rapid heart beat, heart palpitations, increased or decreased blood pressure, dyshythmia, ), respiration (acute pulmonary edema, respiratory depression, apnea, asphyxia), cause vision disturbances and dilated pupils, and cause loss of appetite. Ingestion: Aspiration hazard. Aspiration of Toiluene into the lungs may cause chemical pneumonitis. May cause irritation of the digestive tract with nausea, vomiting, pain. May have effects similar to that of acute inhalation. Chronic Potential Health Effects: Inhalation and Ingestion: Prolonged or repeated exposure via inhalation may cause central nervous system and cardiovascular symptoms similar to that of acute inhalation and ingestion as well liver damage/failure, kidney damage/failure (with hematuria, proteinuria, oliguria, renal tubular acidosis), brain damage, weight loss, blood (pigmented or nucleated red blood cells, changes in white blood cell count), bone marrow changes, electrolyte imbalances (Hypokalemia, Hypophostatemia), severe, muscle weakness and Rhabdomyolysis. Skir: Repeated or prolonged skin contact may cause defatting dermatitis. (Toluene) Acute Potential Health Effects: Skin: May cause mild skin irritation, and sensitization. It can be absorbed through the s				

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Section 12. Ecological Information					
Ecotoxicity	Not available.				
BOD5 and COD	Not available.				
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.				
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.				
Special Remarks on the Products of Biodegradation	Not available.				
Section 13. Disposal Considerations					
Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.				

Section 14. Trans	Section 14. Transport Information				
DOT Classification	CLASS 3: Combustible liquid with a flash point greater than 37.8C (100F).				
Identification	UNNA: 1993 : Flammable Liquid, n.o.s. (Isopropanol; Toluene, mixture) PG: II				
Special Provisions for Transport	Not available.				
DOT (Pictograms)	PARIMULE LOCAL 3				

	r Regulatory Information and Pictograms
Federal and State Regulations	California prop. 65: This product contains the following ingredients for which the State of California has fount to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Toluene California prop. 65: This product contains the following ingredients for which the State of California has fount to cause reproductive harm (female) which would require a warning under the statute: Toluene California prop. 65 (no significant risk level): Toluene: 7 mg/day (value) California prop. 65 (acceptable daily intake level): Toluene: 7 mg/day (value) California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Toluene New York release reporting list: Toluene Rhode Island RTK hazardous substances: Toluene; Isopropyl alcohol Pennsylvania RTK: Toluene; Isopropyl alcohol Michigan critical material: Toluene Massachusetts RTK: Toluene; Isopropyl alcohol New Jersey: Toluene; Isopropyl alcohol New Jersey spill list: Toluene; Isopropyl alcohol New Jersey spill list: Toluene; Isopropyl alcohol New Jersey spill list: Toluene; Isopropyl alcohol New Jersey apill reporting: Toluene TSCA 8(b) inventory: Toluene; Isopropyl alcohol TSCA 8(a) IUR: Isopropyl alcohol TSCA 8(d) H and S data reporting: Toluene: Effective date: 10/04/82; Sunset Date: 10/0/92; Isopropyl alcohol: Effective date: 12/15/86 TOOL 04/01 the removement of the state is t
	TSCA 12(b) one time export: Isopropyl alcohol SARA 313 toxic chemical notification and release reporting: Toluene 50%; Isopropyl alcohol 49.5% CERCLA: Hazardous substances.: Toluene: 1000 lbs. (453.6 kg);
California	
Proposition 65 Warnings	California prop. 65: This product contains the following ingredients for which the State of California h found to cause birth defects which would require a warning under the statute: Toluene

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Other Regulations	For Isopropyl alcoho EINECS: This produ No. 200-661-7). Canada: Listed on C China: Listed on Na Japan: Listed on Na Korea: Listed on Na Philippines: Listed on For Toluene: EINECS: This produ No. 203-625-9).	i: Lact is on the Canadian D Lational Invertional Invertional Invertional National Invertional AICS. Lact is on the Canadian D Lational Invertional Invertional Invertional Invertional Invertional	ntory (ENCS). ntory (KECI). Inventory (PICCS). e European Inventory of Exist Domestic Substance List (DSL) ntory. ntory (ENCS). ntory (KECI).	ing Commer	cial Chemic	al Substances (EINECS
Other Classifications	WHMIS (Canada)	CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). D-2B: Material causing other toxic effects (TOXIC).				
	DSCL (EEC)	R36/38-1 R48/20-H damage t exposure R63-Pos unborn ch R65-Har damage i	mful: may cause lung f swallowed. ors may cause drowsiness	S16- Keep smoking. S26- In cas immediatel medical ad S36/37- W gloves. S46- If swa immediatel S62- If swa	se of contact y with plenty vice. ear suitable allowed, seek y and show t illowed, do n cal advice im	tly closed. ources of ignition - No with eyes, rinse of water and seek protective clothing and c medical advice this container or label. ot induce vomiting: mediately and show
HMIS (U.S.A.)	Health Hazard Fire Hazard Reactivity Personal Protection	2 3 0 h	National Fire Protection Association (U.S.A.)	Health	20	Flammability Reactivity Specific hazard
WHMIS (Canada) (Pictograms)		Ţ				
DSCL (Europe) (Pictograms)		XI				
TDG (Canada) (Pictograms)						
ADR (Europe) (Pictograms)						
Protective Equipment						
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Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Splash goggles.

Gloves.

Lab coat.

Section 16. Other Information				
MSDS Code	T3756			
References	Not available.			
Other Special Considerations	Not available.			
Validated by Sonia Owen on 11/28/2011.		Verified by Sonia Owen. Printed 11/28/2011.		
CALL (310) 516-8000				

#### Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.