

TRICAN MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	Trican X.K.O.	Code
Supplier	Trican Well Service Ltd. 2900, 645 – 7 th Ave S.W. Calgary, Alberta, T2P 4G8 For Product Information/MSDS Call: 403-266-0202 or 403-723-3688 (8:00 AM - 5:00 PM. CST, Monday – Friday)	Revision Date February 16, 2008
Product Uses	Organic Solvent	Supersedes Date March 11, 2005
24 Hour Emergency Numbers	CANUTEC 613-996-6666 (Canada 24 hours) ERP2-1592 1-800-661-9497	Preparation Date February 16, 2008

WHMIS (Pictograms)



WHMIS (Classification)

B2 – Flammable Liquid
D1A–Very toxic causing immediate and serious effects.
D2A – Very toxic material causing other toxic effects
D2B – Toxic material causing other toxic effects
E- Corrosive material

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

SECTION 2. COMPOSITION AND INFORMATION ON INGREDIENTS

Name	CAS #	%	TLV	LD(50)	LC(50)*
Hydrocarbon (aromatic and paraffinic hydrocarbons)	8002-05-9	60-100	Not Available	Not Available	Not Available
Benzene	71-43-2	<1	TWA: 0.5 ppm STEL: 2.5 ppm	Oral, Rat 3.8 g/kg	Vapour, Rat 1,000 ppm
Xylene*	1330-20-7	10-30	TWA: 100 ppm STEL: 150ppm	Oral, Rat 4300mg/kg Dermal, Rabbit > 2 g/kg	Vapour, Rat 5000ppm/ 4hr Skin, Rabbit >1700 mg/kg
Ethylbenzene	100-41-4	10-30	TWA: 100 ppm STEL: 125 ppm	Oral, Rat 3500mg/kg	Vapour, Rat 4000ppm/ 4hr
Sulphuric acid	7664-93-9	0.1-1	TWA: 0.2 mg/m ³	Oral, Rat 2140 mg/kg	Inhalation, Rat 320 mg/m ³
Alkyl benzenesulfonic acid	68584-22-5	0.1-1	Not Available	Not Available	Not Available

Please consult with local authorities for acceptable provincial exposure limits since values can vary from jurisdiction to jurisdiction.

*All LC(50) are based on a four hour exposure unless noted.

SECTION 3. HAZARDS IDENTIFICATION

Hazard Summary	May cause cancer. Highly Flammable. Harmful by inhalation. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin or if swallowed. Keep away from sources of ignition. Avoid contact with eyes. Do not pour down drains. Take precautionary measures against static discharge.
Routes of Exposure	Eyes, skin, inhalation and ingestion.
Potential Acute Health Effects	
Eyes Contact	Causes irritation.
Skin Contact/Absorption	Low toxicity. Frequent or prolonged contact may irritate the skin and cause a rash (dermatitis).
Inhalation	High vapour concentrations are irritating to eyes, nose, throat and lungs. May cause headache, drowsiness, tachycardia, tremors, confusion,

	unconsciousness, euphoria, lassitude (weakness, exhaustion), dilated pupils, lacrimation(discharge of tears) anxiety, muscle fatigue, insomnia, paresthesia, dermatitis, liver, kidney damage and dizziness. May be anesthetic and may cause central nervous system effects. Avoid breathing vapours or mist. Hydrogen Sulfide gas may be released and cause irritation, breathing failure, coma and death without any warnings being sensed.
Ingestion	Small amounts of this liquid, drawn into the lungs from swallowing or vomiting may cause severe health effects (e.g. bronchopneumonia or pulmonary edema).
Medical Conditions Aggravated by Exposure	Not Available
See Toxicological Information (Section 11)	
Additional Hazard Identification	Not Available
Remarks	

SECTION 4. FIRST AID MEASURES	
Skin Contact	Flush with large amounts of soapy water. Remove contaminated clothing and footwear. Wash before reuse. Consult a physician if irritation develops or persists.
Eye Contact	Flush eyes with gentle but large streams of water for at least 15 minutes, lifting lower and upper eyelids occasionally. If irritation persists get medical attention.
Inhalation	In emergency situations, use proper respiratory protection to rescue victims. If inhaled, remove to fresh air. If not breathing, administer artificial respiration. Seek medical assistance. Call a physician immediately.
Ingestion	DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Keep at rest. Call physician immediately.
Notes to Physician	Not Available
Additional First Aid Remarks	Not Available

SECTION 5. FIRE AND EXPLOSION DATA	
Conditions of Flammability	Excessive heat, open flames.
Extinguishing Media	Alcohol foam, CO ₂ , Dry chemical.
Protective Clothing (Fire)	Wear a SCBA and full protective gear for large fires. For very small fires extinguish by a fire extinguisher, SCBA may not be required.
Hazardous combustion Products	Oxides of carbon and sulphur.
Sensitivity to Mechanical Impact	Not Available
Sensitivity to Static Discharge	Ground and bond containers when transferring product.
Special Remarks on Fire Hazards	Vapours may travel to source of ignition and flash back. Vapours may cause explosive mixtures with air. Runoff to sewer may create fire or explosion hazard. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.

SECTION 6. ACCIDENTAL RELEASE MEASURES	
Leak and Spill Procedures	Put on appropriate personal protective equipment. Keep personnel removed and upwind of spill. Shut off all ignition sources; no flares, smoking or flames in hazard area. Approach release from upwind. Shut off leak if it can be done safely. Contain spilled material. Keep out of waterways. Dike large spills and use a non-sparking or explosion proof means to transfer material to an appropriate container for disposal. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container. Note that flammable vapours may form an ignitable mixture with air. Vapours may travel considerable distances from spill and flash back if ignited. Waste must be disposed of in accordance with federal, provincial and local environmental control regulations. ... Issue "hazard" warning. Eliminate all ignition sources. Isolate hazard area and restrict access. Try to work upwind of spill. Avoid direct contact with material. Wear NIOSH approved self-contained breathing apparatus (if applicable) and protective clothing.

	<p>Prevent spilled material from entering sewers, watercourses or low-lying areas.</p> <p>Stop leak only if safe to do so. Dike and contain land spills with inert material (earth, clay or sand). For large spills, remove by mechanical means and place in containers. Absorb residue or small spills with inert absorbent material and remove to non-leaking containers for disposal. Flush area with water to remove trace residue.</p> <p>Dispose of recovered materials as in section 13. Notify fire and environmental agencies.</p> <p>Provincial and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities.</p>
Additional Accidental Release Measures Remarks	Not Available

SECTION 7. HANDLING AND STORAGE	
Handling Procedure and Equipment	<p>Put on appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Avoid breathing vapours or spray mists. Use only with adequate ventilation. Store in a dry, cool and well ventilated area. Keep away from heat, sparks and flame. Keep away from incompatibles. Keep container tightly closed and dry. To avoid fire or explosion ground container equipment and personnel before handling product.</p> <p>.....</p> <p>Maintain good personal hygiene. Wear appropriate personal protective equipment and avoid contact with skin, eyes or clothing. No smoking, eating or drinking allowed when using this product. Wash thoroughly after handling product. Avoid breathing vapours and prolonged or repeated contact with skin or eyes. Use adequate ventilation. Locate safety shower and eyewash station in use area.</p> <p>Empty containers may contain product residue. Follow labeled warnings even after container is emptied. Do not cut, drill, grind or weld on or near container.</p> <p>Air dry and then launder contaminated clothing prior to reuse. Store product-contaminated rags in container with tight-fitting lid.</p>
Storage Requirements	<p>Store in a cool, well-ventilated area, away from incompatibles. Keep container tightly closed when not in use. Store in totally enclosed equipment designed to avoid ignition and human contact. Store in an isolated building that is cool and well ventilated. Storage tanks should be above ground, over an area sealed on the bottom and diked to hold entire contents.</p>
Additional Accidental Release Measures Remarks	Not Available

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION	
Engineering Controls	<p>Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.</p>
Personal Protection	<p>Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended, however, to determine the level of personal protective equipment appropriate for these job tasks and conditions.</p> <p>Respirator Respirator use is not expected to be necessary under normal conditions of use. In poorly ventilated areas, emergency situations or if exposure may or does exceed exposure limits use a NIOSH/MSHA approved atmosphere-supplying respirator or an air-purifying respirator for organic vapours.</p> <p>Hands Nitrile or neoprene gloves.</p> <p>Eyes Chemical safety glasses or goggles and face shield.</p> <p>Body Wear long sleeves to prevent repeated or prolonged skin contact.</p> <p>Feet Stead toed, chemical resistant boots.</p> <p>Other Emergency eyewash fountains and safety showers should be in the immediate vicinity of any potential exposure. Remove contaminated clothing and launder before reuse.</p>

Protective Clothing (Pictograms)

Additional Exposure Control

Not Available

Remarks

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Odour and Appearance	Varies from mild pleasant hydrocarbon to mild rotten eggs; Colourless to cola tint
Odour Threshold	Not Available
Specific Gravity	0.7 – 0.78 (H ₂ O = 1.0)
Flashpoint	18°C (Pensky Marten Closed Cup)
Upper Flammable Limit (% by volume)	Not Available.
Lower Flammable Limit (% by volume)	Not Available.
Autoignition Temperature	> 400°C (Estimated)
Vapour Density (air=1)	2.5 @ 30°C
Vapour Pressure	4.1 kPa
Evaporation Rate	Not Available
Boiling Point	Not Available
Freezing Point	< -60°C
Pour Point	Not Available
pH	Not Available
Viscosity	Not Available
Solubility in Water	Essentially insoluble in water
Coefficient of Water/Oil	Not Available
Physical Chemical Comments	Not Available

SECTION 10. STABILITY AND REACTIVITY DATA

Chemical Stability	Stable under normal use and storage.
Conditions of Instability	Not Available
Incompatible Material	Heat, ignition, oxidizing agents.
Conditions of Reactivity	With incompatible materials.
Hazardous Decomposition Products	Oxides of carbon and sulphur.
Hazardous Polymerization	Will not occur.
Special Stability & Reactivity	Not Available
Remarks	

SECTION 11. TOXICOLOGICAL INFORMATION**Component Toxicological Information****Acute Toxicity**

1) Hydrocarbon (aromatic and paraffinic hydrocarbons) (8002-05-9)	Not Available
2) Benzene (71-43-2)	Oral (LD50): Acute: 3.8g/kg Rat Vapour (LC50): Acute: 1000 ppm Rat
3) Xylene (1330-20-7)	Oral (LD50): Acute: 4300 mg/kg Rat Dermal (LD50): Acute: >2g/kg Rabbit Vapour (LC50): Acute: 5000ppm/4hr Rat
4) Ethylbenzene (100-41-4)	Oral (LD50): Acute: 5000mg/kg Rat Vapour (LC50): Acute: 8000 ppm 4 hr Rat
5) Sulphuric acid (7664-93-9)	Oral (LD50): Acute: 3500 mg/kg Rat Vapour (LC50): Acute: 4 000 ppm 4hr Rat
6) Alkyl benzenesulfonic acid	Oral (LD50): Acute: 2140 mg/kg Rat

(68584-22-5)	Vapour (LC50): Acute: 320 mg/m3
Effects of Acute Exposure	<i>See Hazards Identification (Section 3)</i>
Effects of Chronic Exposure	May contain n-hexane. Prolonged and repeated exposures may cause damage to the eyes, skin, respiratory system, central nervous system, liver, kidneys and hearing loss. May also cause fatigue, headache, dizziness, nausea, loss of appetite, loss of weight, weakness, nosebleeds, bleeding gums, menorrhagia, petechiae, purpura aplastic anemia, acute myeloblastic leukemia, erythroleukemia and death Contains benzene. Human health studies indicate prolonged and/or repeated overexposure to benzene may cause damage to the blood producing system and serious blood disorder, including leukemia. Changes in pulmonary function, chronic bronchitis, dermatitis, decay and erosion of dental enamel, nasal and oral mucosal ulceration, conjunctivitis and overt upper respiratory tract abnormalities.
Irritancy of Product	Skin, eyes, nose, mucous membrane and respiratory system.
Skin Sensitization	Not Available
Respiratory Sensitization	Not Available
Carcinogenicity	Benzene – Group 1 (IARC); Group A1 (ACGIH); Group K (NTP); Group 'yes' (OSHA). Confirmed Human Carcinogen
Reproductive Toxicity	Embryotoxicity in animals. Spontaneous abortion and/or congenital defects. Very limited Data suggest toxicosis, miscarriage, hemorrhage during childbirth and infertility may occur.
Teratogenicity	Spontaneous abortion and stillbirth may occur.
Embryotoxicity	Embryotoxicity in animals.
Mutagenicity	Benzene – found to cause chromosome changes at concentrations that induce blood dyscrasias.
Target organs	CNS, Eyes, skin, respiratory system, central nervous system, liver, kidneys and hearing loss. Chronic exposure has resulted in aplastic anemia.
Target effects	Blood toxic effect on blood formation, causing aplastic anemia & tendency to hemorrhage. Occasionally hemorrhages in retina & in connective chronic benzene toxicity are expressed as bone marrow depression resulting in leucopenia, anemia or thrombocytopenia.
Synergistic Products/Effects	Not Available
Other Adverse Effects	Not Available


SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	Not Available
BOD5 and COD	Not Available
Biodegradable/OECD	Not Available
Toxicity of the Products of Biodegradation	Not Available
Special Remarks	Do not allow product or run-off from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. May be harmful to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with all applicable federal, provincial and local regulations.	
Additional Waste Remarks	Note that these regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.

SECTION 14. TRANSPORT INFORMATION

TDG Classification	PETROLEUM DISTILLATES, N.O.S. (Xylene, Ethylbenzene) Class 3, UN1268, PG II	
Marine Pollutant	Not applicable.	
Additional TDG Information	Not applicable.	
Emergency Response Guide	Guide No. 128	
Page Number	Page 204	

SECTION 15. REGULATORY INFORMATION

Canadian Regulations



WHMIS

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations (CPR) and the MSDS contains all information required by the CPR. Class B2,D1A, D2A, D2B, and E.

Environmental Regulations

Not available

DSL Inventory

All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

TSCA Inventory Status

All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory.

This product contains the following components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States.

International Regulations

European Union

All components are included or are exempted from listing on the European Inventory of Existing Commercial Chemical Substances or the European List of Notified Chemical Substances.

ILO Risk and Safety Phrases

Risk Phrases: 11-20/21-45-48/23/24/25-29

May cause cancer. Highly Flammable Harmful by inhalation and in contact with skin. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Contact with water liberates toxic gases.

Safety Phrases: (2-)16-24/25/-26-29-30-35-45-53

Keep out of reach of children. Keep away from sources of ignition. Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice Never add water to this product. Do not pour down drains. This material and its container must be disposed of in a safe way. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Symbols: F,T,Xn,C

Flammable, Poisonous, Toxic, Corrosive

Other Regulatory Information

No further regulatory information is available.

SECTION 16. OTHER INFORMATION

Other Special Considerations

Format change; New issue

Trican Well Service Ltd. Disclaimer

NOTE: The information on this MSDS is based on data which is considered to be accurate. Trican Well Service Ltd., however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

END OF MATERIAL SAFETY DATA