



CITCOOL® 33 Concentrate

Material Safety Data Sheet

CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210

MSDS No. 639333001
Revision Date 09/21/2004

Hazard Rankings		
	HMIS	NFPA
Health Hazard	* 2	2
Fire Hazard	0	0
Reactivity	0	0

* = Chronic Health Hazard

IMPORTANT: Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

Emergency Overview	
Physical State	Liquid.
Color	Clear blue to green. Odor Mild.
CAUTION:	
HARMFUL IF ABSORBED THROUGH SKIN.	
Mist or vapor can irritate the respiratory tract.	
Skin irritation can result from prolonged or repeated contact with used metalworking fluids.	
Repeated overexposure may cause liver and kidney damage.	
Spills may create a slipping hazard.	

Protective Equipment
Minimum Recommended See Section 8 for Details
  

SECTION 1. PRODUCT IDENTIFICATION

Trade Name	CITCOOL® 33 Concentrate	Technical Contact	(800) 248-4684
Product Number	639333001	Medical Emergency	(918) 495-4700
CAS Number	Mixture.	CHEMTREC Emergency (United States Only)	(800) 424-9300
Product Family	Metalworking fluid		
Synonyms	Metalworking fluid; CITGO® Material Code No.: 639333001		

SECTION 2. COMPOSITION

Component Name(s)	CAS Registry No.	Concentration (%)
Triethanolamine	102-71-6	20 - 30
Proprietary Ingredients	Proprietary Mixture	5 - 20
Polyoxyalkylene glycol	9038-95-3	5 - 10
Disodium Dimercaptothiadiazole	55906-42-8	0 - 5

SECTION 3. HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact. Eye contact. Inhalation.

Signs and Symptoms of Acute Exposure

Inhalation Product mist can irritate the mucous membranes of the nose, the throat, bronchi, and lungs.

Eye Contact

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This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. Symptoms include stinging, watering, redness, and swelling.

Skin Contact

Skin Irritant. This material can cause moderate skin irritation with short-term contact based upon data from components or similar materials.

Ingestion

Depending upon water dilution, may cause mucous membrane irritation or chemical burns to the mouth, throat, and gastrointestinal tract with accompanying nausea, abdominal pain, and/or diarrhea. Based upon rodent feeding studies of Ethanolamines, repeated ingestion may cause liver and/or kidney damage.

Chronic Health Effects Summary

Repeated overexposure may cause liver and kidney damage. Prolonged or repeated skin contact can cause irritation and inflammation characterized by drying, or cracking skin (dermatitis). In addition, incidents of allergic contact dermatitis have been reported from exposure to some used metal working fluids. Repeated exposure to metalworking fluid mists at concentrations above applicable workplace exposure levels have been associated with respiratory irritation or other pulmonary effects. Exposure to microbial contaminants found in certain used metalworking fluids have been associated with asthma and a lung inflammation condition known as hypersensitivity pneumonitis. Symptoms are similar to pneumonia including headache, cough and chest pain. Repeated occurrences of acute hypersensitivity pneumonitis can result in irreversible lung damage.

Conditions Aggravated by Exposure

Medical conditions aggravated by exposure to this material may include pre-existing skin disorders, allergies and chronic respiratory diseases.

Target Organs

May cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract, skin.

Carcinogenic Potential

This product is not known to contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification		OSHA Physical Hazard Classification							
Irritant	<input checked="" type="checkbox"/>	Sensitizer	<input type="checkbox"/>	Combustible	<input type="checkbox"/>	Explosive	<input type="checkbox"/>	Pyrophoric	<input type="checkbox"/>
Toxic	<input type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input type="checkbox"/>	Oxidizer	<input type="checkbox"/>	Water-reactive	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>	Organic Peroxide	<input type="checkbox"/>	Unstable	<input type="checkbox"/>

SECTION 4. FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation

Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. Keep the affected individual warm and at rest.

Eye Contact

Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.

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Skin Contact	If burned by hot material, cool skin by quenching with large amounts of cool water. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately.
Ingestion	Do not induce vomiting unless directed to by a physician. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. If significant amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.
Notes to Physician	Treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

NFPA Flammability Classification	Not applicable.		
Flash Point	Not applicable.		
Lower Flammable Limit	No data.	Upper Flammable Limit	No data.
Autoignition Temperature	Not available.		
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and trace oxides of sulfur and/or nitrogen.		
Special Properties	This is an aqueous solution. After the water component evaporates, the remaining material will burn.		
Extinguishing Media	Use dry chemical, "alcohol" foam or Carbon Dioxide. Water may be ineffective as an extinguishing medium, but may be used to cool fire-exposed containers.		
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.		

SECTION 6. ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material is miscible in water. Comply with all laws and regulations.

SECTION 7. HANDLING AND STORAGE

Handling	Dilute with water in accordance with prescribed recommendations prior to use. Avoid breathing vapors or spray mists. Avoid contact with eyes, skin or clothing. Avoid contamination and extreme temperatures to minimize product degradation. Empty containers may contain product residues that can ignite with explosive force. Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product. FOR INDUSTRIAL USE ONLY
Storage	Keep container closed. Do not store with strong oxidizing agents. Do not store at elevated temperatures. Avoid storing product in direct sunlight for extended periods of time. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.
Personal Protective Equipment	Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



Eye Protection	Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles and/or face shield if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.
Hand Protection	Avoid skin contact. Use gloves constructed of chemical resistant materials such as butyl rubber or PVC gloves or appropriate barrier creams with prolonged or repeated contact. If the product is processed or handled at elevated temperature, protect against thermal burns by using heat-resistant (insulated) gloves. Do not wear gloves or loose fitting clothing around rotating or moving equipment. Use good personal hygiene practices.
Body Protection	Use clean protective clothing (e.g., neoprene or Tyvek®) if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated clothing before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.
Respiratory Protection	Airborne concentration will determine the level of respiratory protection required. Respiratory protection is normally not required unless the product is heated or misted. For known or anticipated vapor or mist concentrations above the occupational exposure guidelines (see below), use a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter if adequate protection is provided. For unknown vapor concentrations or concentrations exceeding respirator protection factors, use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA). Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).

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General Comments Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners.

Occupational Exposure Guidelines

Substance

Triethanolamine

Metal Working Fluid, Soluble

Applicable Workplace Exposure Levels

ACGIH (United States).

TWA: 5 mg/m³

NIOSH (United States).

TWA: 0.4 mg/m³ Form: *Thoracic particulate mass

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State	Liquid.	Color	Clear blue to green.	Odor	Mild.
Specific Gravity	1.07 (Water = 1)	pH	Not Applicable.	Vapor Density	>1 (Air = 1)
Boiling Range	100°C (212°F)			Melting/Freezing Point	-25°C (-13°F)
Vapor Pressure	Not available.			Volatility	No data.
Solubility in Water	Easily soluble in cold water.			Viscosity (cSt @ 40°C)	not available
Additional Properties	No additional information.				

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage and handling conditions (see section 7).	Hazardous Polymerization	Not expected to occur.
Conditions to Avoid	This material contains one or more amines which can react with nitrites to form nitrosamines. Some nitrosamines have been shown to be carcinogenic in laboratory animals.		
Materials Incompatibility	This material is incompatible with materials that are reactive with hydroxyl compounds, strong oxidizers and acids.		
Hazardous Decomposition Products	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.		

SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

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Toxicity Data

Triethanolamine:

Triethanolamine can cause mild skin irritation at concentrations above 5%. In dermal studies conducted in B6C3F₁ mice (NTP Report No. IMM90005), no statistically significant group or dose-dependent contact hypersensitivity responses to triethanolamine were observed. Based on animal studies, triethanolamine can be dermally absorbed at concentrations sufficient to produce systemic toxicity. In dermal studies, there was equivocal evidence of carcinogenic activity of triethanolamine in male F344/N rats based on a marginal increase in renal tubule cell adenomas. There was no evidence of carcinogenic activity in female F344/N rats that were administered triethanolamine at concentrations of 63, 125 or 250 mg/kg body weight. Triethanolamine is not mutagenic with and without S-9 activation. NTP, IARC and OSHA have not designated triethanolamine as a carcinogen.

Polyoxyalkylene glycol:

In an acute inhalation studies, rats were exposed to aerosol concentrations of polyalkylene glycols (average MW 2,900) (Klonne et al, 1987). Exposure related mortalities occurred at the two highest exposure concentrations. Also, slightly increased respiratory rates and locomotor activity were noted. The acute inhalation LC₅₀ was calculated to be 330 mg/M³. In another study, exposure related mortalities occurred (DuPont, 1986). The approximate lethal concentration (ALC) was determined to be 390 mg/M³. Another inhalation study with rats, exposure-related mortalities occurred (Ulrich et al., 1992). Study findings included treatment-related changes in the alveoli and terminal airways including moderate to severe alveolar inflammation.

Metalworking Fluid, Soluble:

Acute and chronic respiratory responses have been reported in occupational exposures to metal working fluids (MWF). In addition, exposure to MWF mists can aggravate existing respiratory conditions. Chronic effects of overexposure to MWF mists can include sinusitis, persistent cough, asthma, increased respiratory tract secretions and airway constriction. Certain studies have suggested that bacterial endotoxin in MWF can result in increased respiratory tract irritation among the exposed population. Endotoxins can stimulate alveolar macrophage release of cytokine mediators that are involved in broncho-constriction and inflammation.

Hypersensitivity pneumonitis (also known as allergic alveolitis) has been reported among automobile workers exposed to MWF. Hypersensitivity pneumonitis is a diffuse interstitial granulomatous lung disease believed to be associated with an immunologic reaction of the lung to repeated inhalation of foreign antigens. In the acute phase, signs and symptoms include alveolar inflammation and influenza-like symptoms. In the chronic phase and following repeated exposures, it is characterized by pulmonary fibrosis. Reoccurring episodes of acute hypersensitivity pneumonitis can lead to progressive, irreversible lung impairment.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	Ecotoxicity data are not available for this product.
Environmental Fate	This product is miscible in water and is expected to readily disperse in marine environments.

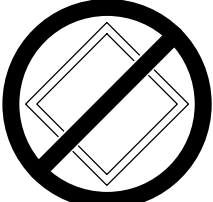
SECTION 13. DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact the RCRA/Superfund Hotline at (800) 424-9346 or your regional US EPA office for guidance concerning case specific disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly bunged or sealed, and promptly sent to a reconditioner.

SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

US DOT Status	Not regulated by the U.S. Department of Transportation as a hazardous material when transported in non-bulk container shipments.		
Proper Shipping Name	Not regulated.		
Hazard Class	Not regulated.	Packing Group(s)	Not applicable.
		UN/NA Number	Not regulated.
Reportable Quantity	A Reportable Quantity (RQ) has not been established for this material.		
Placard(s)		Emergency Response Guide No.	Not applicable.
		HAZMAT STCC No.	Not available.
		MARPOL III Status	Not a DOT "Marine Pollutant" per 49 CFR 171.8.

SECTION 15. REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312 Hazard Identification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories:

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Acute (Immediate) Health Hazard, Chronic (Delayed) Health Hazard

SARA 313 Toxic Chemical Notification and Release Reporting

This product contains the following components in concentrations above de minimis levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. Chemical substances present in this product or refinery stream that may be subject to this statute are:
Diethanolamine [CAS No.: 111-42-2] RQ = 100 lbs. (45.36 kg) Concentration: <0.1%

Clean Water Act (CWA)

Discharges or spills of this material onto or in waters of the United States, adjoining shorelines, or into conduits leading to surface waters of the US without proper Federal or State permits should be reported to the National Response Center at (800) 424-8802.

California Proposition 65

This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.

New Jersey Right-to-Know Label

New Jersey RTK: 639333001

Additional Regulatory Remarks

No additional regulatory remarks.

SECTION 16. OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number 2.0
Revision Date 09/21/2004
Print Date Printed on 09/21/2004.

ABBREVIATIONS

AP: Approximately	EQ: Equal	>: Greater Than	<: Less Than	NA: Not Applicable	ND: No Data	NE: Not Established
ACGIH: American Conference of Governmental Industrial Hygienists				AIHA: American Industrial Hygiene Association		
IARC: International Agency for Research on Cancer				NTP: National Toxicology Program		
NIOSH: National Institute of Occupational Safety and Health				OSHA: Occupational Safety and Health Administration		
NPCA: National Paint and Coating Manufacturers Association				HMIS: Hazardous Materials Information System		
NFPA: National Fire Protection Association				EPA: US Environmental Protection Agency		

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THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE

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