



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name CI-150
Revision Date 1/18/2012
Version # 4
Product Use Acid Corrosion Inhibitor
Manufacturer / Supplier FRAC TECH SERVICES LLC
2500 HWY 62 West
Chickasha, OK 73018
US
General information: 1-405-222-2300
Emergency 24 Hour Emergency: INFOTRAC: 1-800-535-5053

2. Hazards Identification

Physical State Liquid.
Appearance Dark amber liquid
Emergency Overview DANGER: Flammable. Risk of serious damage to eyes. Harmful by inhalation and in contact with skin. May cause sensitization by skin contact. Irritating to skin. Keep away from heat. Keep away from sources of ignition. No smoking. Keep container tightly closed. Do not get in eyes, on skin, or clothing. Do not take internally. Avoid breathing vapor. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact wash skin immediately with plenty of soap and water.

OSHA regulatory status This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Routes of exposure

Eyes Severely irritating. If not removed promptly, will injure eye tissue and may result in permanent eye damage.
Skin May cause moderate irritation. Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.
Inhalation Elevated temperatures or mechanical action may form vapors, mists or fumes which may be irritating to the eyes, nose, throat and lungs. Harmful by inhalation.
Ingestion Not a likely route of exposure. There may be irritation to the gastro-intestinal tract. May cause nausea and vomiting. Can cause central nervous depression.

Potential environmental effects Not available.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Isopropanol	67-63-0	10 - 30
Dimethylformamide	68-12-2	5 - 10
Organic amine resin salt	Proprietary	10 - 30
Quaternary ammonium compound	Proprietary	5 - 10
Aromatic aldehyde	Proprietary	5 - 10
Ethylene Glycol	107-21-1	10 - 30

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye Contact Get immediate medical attention. PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Immediately flush eye with water for at least 15 minutes while holding eyelids open.
Skin Contact Seek medical advice with urgency. For a large splash, flood body under a shower. Immediately wash with plenty of soap and water. If symptoms develop, seek medical advice.

Inhalation	Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.
Ingestion	Get medical attention. Do not induce vomiting, contains petroleum distillates and/or aromatic solvents. If conscious wash out mouth and give water to drink.
Notes to physician	Not available.

5. Fire Fighting Measures

Flammable Properties Foam, carbon dioxide, and dry powder. Other extinguishing agent suitable for Class B fires. For large fires, use water spray or fog, thoroughly drenching the burning material.

Extinguishing media

Suitable extinguishing media Do not use water unless flooding amounts are available.

Unsuitable extinguishing media Flammable liquid; may release vapors that form flammable mixtures at or above the flash point. Vapors can travel to a source of ignition and flash back. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other ignition sources.

Specific Hazards arising from the Chemical Not available.

Firefighting equipment / instructions Wear a full face positive-pressure self contained breathing apparatus and protective suit.

Specific Methods Not available.

Hazardous combustion products May evolve oxides of carbon and oxides of nitrogen under fire conditions.

6. Accidental Release Measures

Personal precautions Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in section 8 (exposure controls/personal protection). Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible. Remove sources of ignition. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, ect.) readily available. Notify appropriate government, occupational health and safety and environmental authorities. Prevent material from entering sewers or waterways. Spilled product may pose a risk to the aquatic ecosystem if released. If drains, soil or sewers become contaminated, notify local authority. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Methods for cleaning up SMALL SPILLS: Soak up with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area.

LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

7. Handling and Storage

Handling Do not get in eyes, skin, or clothing, Do not take internally. Use with adequate ventilation. Do not breathe vapors/gases/dust. Keep the containers closed when not in use. Have emergency equipment (for fires, spill, leaks, etc.) readily available. Ensure all containers are labeled. Do not use, store or pour near heat, sparks, or open flame.

Storage Store in suitable labeled container. Store the containers tightly closed. Store away from heat and sources of ignition. Have appropriate fire extinguishers available in and near the storage area. Connections must be grounded to avoid electrical charges. Store separately from oxidizers.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3

Isopropanol	200	Not available.	400	Not available.
Dimethylformamide	10	Not available.	Not available.	Not available.
Organic amine resin salt	Not available.	Not available.	Not available.	Not available.
Quaternary ammonium compound	Not available.	Not available.	Not available.	Not available.
Aromatic aldehyde	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	100 (Ceiling)	Not available.	Not available.

US. OSHA Table Z-1 Limits for Air Contaminates (29 CFR 1910.1000)

Components	PEL	
	ppm	mg/m3
Isopropanol	400	980
Dimethylformamide	10	30
Organic amine resin salt	Not available.	Not available.
Quaternary ammonium compound	Not available.	Not available.
Aromatic aldehyde	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.

Canada. Alberta OELs (Occupational Health Safety Code, Schedule 1, Table 2)

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Isopropanol	Not available.	Not available.	Not available.	Not available.
Dimethylformamide	Not available.	Not available.	Not available.	Not available.
Organic amine resin salt	Not available.	Not available.	Not available.	Not available.
Quaternary ammonium compound	Not available.	Not available.	Not available.	Not available.
Aromatic aldehyde	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	Not available.	Not available.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Isopropanol	Not available.	Not available.	Not available.	Not available.
Dimethylformamide	Not available.	Not available.	Not available.	Not available.
Organic amine resin salt	Not available.	Not available.	Not available.	Not available.
Quaternary ammonium compound	Not available.	Not available.	Not available.	Not available.
Aromatic aldehyde	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	Not available.	Not available.

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents) Components

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Isopropanol	Not available.	Not available.	Not available.	Not available.
Dimethylformamide	Not available.	Not available.	Not available.	Not available.
Organic amine resin salt	Not available.	Not available.	Not available.	Not available.
Quaternary ammonium compound	Not available.	Not available.	Not available.	Not available.
Aromatic aldehyde	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	Not available.	Not available.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) Components

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Isopropanol	Not available.	Not available.	Not available.	Not available.
Dimethylformamide	Not available.	Not available.	Not available.	Not available.
Organic amine resin salt	Not available.	Not available.	Not available.	Not available.
Quaternary ammonium compound	Not available.	Not available.	Not available.	Not available.
Aromatic aldehyde	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	Not available.	Not available.

Mexico. Occupational Exposure Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Isopropanol	Not available.	Not available.	Not available.	Not available.
Dimethylformamide	Not available.	Not available.	Not available.	Not available.
Organic amine resin salt	Not available.	Not available.	Not available.	Not available.
Quaternary ammonium compound	Not available.	Not available.	Not available.	Not available.
Aromatic aldehyde	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	Not available.	Not available.

Engineering controls

The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces.

Personal protective equipment

Eye / face protection

Wear face shield with chemical splash goggles.

Skin protection

When handling this product, the use of a chemical resistant suit and rubber boots is recommended.

Respiratory protection

Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended. A suitable filter material depends on the amount and type of chemicals being handled. Consider the use of filter type. Multi

contaminant cartridge, with a Particulate pre-filter. In the event of emergency or planned entry in unknown concentrations a positive pressure, full face piece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

General hygiene consideration

Use good work and personal hygiene practices to avoid exposure. Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink, or smoke.

9. Physical and Chemical Properties

Appearance:	Dark, amber liquid
Color	Dark amber
Odor	Alcoholic
Odor threshold	Not available.
Physical State	Liquid
Form	Liquid
pH	Not available.
Melting point	Not available.
Freezing point	Not available.
Boiling point	176 °F (80 °C) Calculated
Flash point	72.0°F (22.0°C) CC
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	51.1 mm Hg @ 100.0 °F (37.7 °C) Calculated
Vapor density	Not available.
Specific Gravity	0.99 @ 60.0 °F / 15.5 °C
Solubility (water)	Dispersible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Bulk Density	8.2 lb/gal
VOC	Not available.
Viscosity	Not available.
Percent volatile	Not available.

10. Chemical Stability Reactivity Information

Chemical Stability	Stable under normal conditions.
Conditions to avoid	Avoid extremes of temperature, Heat and sources of ignition including static discharges.
Incompatible material	Strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate).
Hazardous decomposition products	Oxides of carbon, oxides of nitrogen

Possibility of hazardous reaction Not available.

11. Toxicology Information

Toxicological Data

Components	Test Results
Isopropanol	Not available.
Dimethylformamide	Not available.
Organic amine resin salt	Not available.
Quaternary ammonium compound	Not available.
Aromatic aldehyde	Not available.
Ethylene Glycol	Not available.

Sensitization Repeated or prolonged contact may cause skin sensitization.

Carcinogenicity

Isopropanol	Not available.
Dimethylformamide	Repeated exposure either by skin contact or by inhalation may cause liver damage. The International Agency for Research on Cancer (IARC) has evaluated Dimethylformamide and found it to be a possible human carcinogen.
Organic amine resin salt	Not available.
Quaternary ammonium compound	Not available.
Aromatic aldehyde	Not available.
Ethylene Glycol	Not available.

Epidemiology Not available.

Mutagenicity Not available.

Reproductive effects Not available.

Teratogenicity Not available.

Further Information Not available.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Isopropanol	Not available.
Dimethylformamide	Not available.
Organic amine resin salt	Not available.
Quaternary ammonium compound	Not available.
Aromatic aldehyde	Not available.
Ethylene Glycol	Not available.

Ecotoxicity	No toxicity studies have been conducted on this product.
Persistence and degradability	Not available.
Bioaccumulation / Accumulation	Component substances have a low potential to bioconcentrate.
Mobility in environmental media	If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages: Air: <5% Water: 30 – 50 % Soil/Sediment: 30 – 50%
Partition coefficient (n-octanol/water)	Not available.

13. Disposal Considerations

Waste codes	D001
Disposal instructions	Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, and disposal or recycling facility. Consult local, state and federal regulations for specific requirements.
Contaminated packaging	Not available.

14. Transport Information

DOT

UN number	UN1219
Proper shipping name	Isopropanol Mixture (Contains Isopropanol 30%)
Hazard class	3
Packing Group	II
Labels required	
DOT reportable quantity	1,000 lbs (DIMETHYLFORMAMIDE)
Additional information	
Special provisions	
Packaging exceptions	
Packaging non bulk	
Packaging bulk	
ERG number	

IATA

UN number	UN1219
Proper shipping name	Isopropanol Mixture (Contains Isopropanol 30%)
Hazard class	3
Packing group	II
Additional information	
ERG code	

IMDG

UN number	UN1219
Proper shipping name	Isopropanol Mixture (Contains Isopropanol 30%)
Hazard class	3
Packing group	II
EmS No	
IMDG Additional information:	This product is regulated as a Marine Pollutant when shipped by Rail, Highway (in bulk quantities), or Air (if no other hazard class applies), and when shipped by water in all quantities.

15. Regulatory Information

US federal regulation Not available.

CERCLA (Superfund) Reportable Quantity: Dimethylformamide: 1000 lbs

Superfund amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories	Immediate Hazard:	Yes
	Delayed Hazard:	Yes
	Fire Hazard:	Yes
	Pressure Hazard:	No
	Reactivity Hazard:	No

Section 302 extremely hazardous substance: This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

Section 311 hazardous chemical: Formic Acid (This product may contain trace levels (<0.1% for carcinogens, <1% all other substances) of the following substance(s) listed under the regulation. Additional components may be unintentionally present at trace levels.)

Section 112 Clean air act: Methanol
Dimethylformamide
Ethylene Glycol

Section 313 hazardous chemical: Isopropanol (67-63-0)
Dimethylformamide (68-12-2)
Ethylene Glycol (107-21-1)

Inventory Status

Country	Inventory Name	On Inventory *
Australia	AICS	No
Canada	DSL	No
Canada	NDSL	Yes
China	IECSC	No
Europe	EINECS	No
Europe	ELINCS	No
Japan	ENCS	No
Korea	ECL	No
New Zealand	NZI	No
United States / Puerto Rico	TSCA	Yes
Phillipines	PICCS	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

WHMIS Information Not available.

State Regulation This product contains the following substances which require warning under California Proposition 65. Additional components may be unintentionally present at trace levels: Pyridine < .1 %.

STATE RIGHT TO KNOW LAWS :
The following substances are disclosed for compliance with State Right to Know Laws:
Isopropanol 67-63-0
Dimethylformamide 68-12-2
Ethylene Glycol 107-21-1

16. Other Information

Further Information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 3*
Flammability: 3
Physical Hazard: 0

A HMIS® rating including an * indicates a chronic hazard.

NFPA ratings

Health: 3
Flammability: 3
Instability: 0

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