

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME METROPOLITAN REFINING CO., INC.		EMERGENCY TELEPHONE NO. 212-729-7200
ADDRESS (Number, Street, City, State, and ZIP Code) 50-23 23rd St., Long Island City, N. Y. 11101		
CHEMICAL NAME AND SYNONYMS Sodium nitrite Tetra Borate Solution		TRADE NAME AND SYNONYMS DUBOTH NB
CHEMICAL FAMILY Inorganic Salt Solution	FORMULA Water solution of Sodium Nitrite, Polyacrylate, Sodium Tetra Borate and Triazole	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
Not applicable					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	Approx.	239°	SPECIFIC GRAVITY (H ₂ O=1)	1.37
VAPOR PRESSURE (mm Hg.)	Approx.	5.0	PERCENT VOLATILE BY VOLUME (%)	70%
VAPOR DENSITY (AIR=1)	Equal to water vapor		EVAPORATION RATE (Ether = 1)	Less than 1.0
SOLUBILITY IN WATER	Complete			
APPEARANCE AND ODOR	Odorless clear to amber color			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	None flammable	FLAMMABLE LIMITS	LeI	UeI
EXTINGUISHING MEDIA	Use water to extonguish flammable materials which may have been			
SPECIAL FIRE FIGHTING PROCEDURES	impregnated with the solution and dried			
UNUSUAL FIRE AND EXPLOSION HAZARDS	Oxidizing solution does not burn but does lower the ignition temperature of wood or paper.			

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SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	None established
EFFECTS OF OVEREXPOSURE	Slight irritant to skin. Moderate irritation to eyes
	Excess ingestion causes nausea, vomiting and diarrhea
EMERGENCY AND FIRST AID PROCEDURES	Skin - Flush with water
	Eyes - Flush with water for 15 minutes - get medical attention

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID Exposure to high temperatures
	STABLE	X	Oxidizing or reducing compounds
INCOMPATABILITY <i>(Materials to avoid)</i>	Chlorine - Sulphamic Acid		
HAZARDOUS DECOMPOSITION PRODUCTS	Nitrogen compounds		
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	Flush with water
WASTE DISPOSAL METHOD	Flush with water

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION <i>(Specify type)</i>			NA
VENTILATION	LOCAL EXHAUST		SPECIAL
	MECHANICAL <i>(General)</i>	NA	NA
		NA	OTHER
			NA
PROTECTIVE GLOVES	Wear rubber gloves	EYE PROTECTION	Wear goggles
OTHER PROTECTIVE EQUIPMENT	NA		

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	Normal good housekeeping practices
OTHER PRECAUTIONS	

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METROPOLITAN REFINING CO., INC.

OFFICES, PLANT AND LABORATORIES

50-23 TWENTY THIRD ST. • LONG ISLAND CITY, N. Y. 11101

LIQUID DUBOTH[®] NB FOR LOW PRESSURE HEATING BOILERS AND CLOSED RECIRCULATING SYSTEMS

DESCRIPTION:

LIQUID DUBOTH NB is a colorless nitrite based water treatment containing the necessary chemicals to prevent corrosion and deposits, sequester hardness in low pressure steam boilers and closed recirculating water systems. LIQUID DUBOTH NB is also used in systems containing glycol based anti-freeze.

LIQUID DUBOTH NB is formulated to prevent corrosion and pitting by maintaining a monomolecular oxide film on the metallic surfaces in contact with the treated water. Both ferrous and non-ferrous metals are protected. Scale is prevented by sequestering the hardness in the recirculating water.

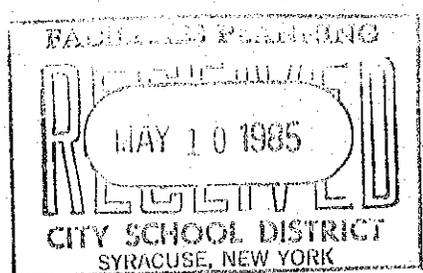
GENERAL SPECIFICATIONS:

- Appearance — Colorless liquid
- Odor — Slight
- Specific Gravity — 1.20-1.25 at 60°F.
- pH 1% Solution — approx. 8.5
- Weight per gallon — 10.0 lbs.
- Solubility in Water — Complete

DOSAGE:

Recommended feed is as follows:

Low Pressure Steam Boilers, Hot Water Heating Systems 250°F Max. and glycol anti-freeze solutions	1 1/2 gal. per 100 gals. system capacity	3000-4000 mg/L Metronite
Hot Water Heating Secondary and Chilled Water Systems 140-180°F	3 quarts per 100 gals. system capacity	1500-2000 mg/L Metronite
Below 140°F	100 gals. 1 quart per system capacity	500-700 mg/L Metronite



METHOD OF FEED:

LIQUID DUBOTH NB can be fed through any convenient opening into the system such as top opening, safety valve, return condensate tank, expansion tank or by-pass feeder.

PACKAGING:

- Standard steel drums — 3/4" and 2" Openings in Head.
- 550 lbs. (55 gallons) — 250 kg (208 L)
 - 350 lbs. (35 gallons) — 159 kg (132L)
 - 50 lbs. (5 gallons) — 23 kg (19 L)