

MATERIAL SAFETY DATA SHEET

SECTION I – PRODUCT & COMPANY IDENTIFICATION

Product Name: Norsol Cleaner NFO Liquid
Product Use: Metal Cleaner
Manufacturer: Contact supplier
Supplier: Northern Technical Solutions Inc.
Address: 7040 Wellington Rd 124 South
Guelph, ON N1H 6J3
Telephone Number: 519-766-9899
Emergency Telephone Number: 519-766-9899

SECTION 2 – HAZARDOUS INGREDIENTS

Chemical Name	CAS#	Wt%	ACGIH-TLVs 8 hr TWA	LC ₅₀ (4 hr, Rat)	LD ₅₀ (Oral, Rat)
Sodium phosphate tribasic dodecahydrate	10101-89-0	3 - 7	Not available	Not available	7400 mg/kg
2-Butoxyethanol	111-76-2	1 - 5	20 ppm (skin)	450 ppm	470 mg/kg
Polyoxyalkylene decyl ether	68439-30-5	1 - 5	Not available	Not available	Not available
Boric acid	10043-35-3	1 - 5	2 mg/m ³ (inhalable)	Not available	2500 mg/kg

SECTION 3 – HAZARDS

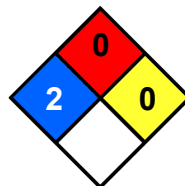
Emergency Overview: CAUTION. IRRITANT. MAY IRRITATE EYES AND SKIN. HARMFUL IF ABSORBED THROUGH SKIN, INHALED OR SWALLOWED. MAY CAUSE CHRONIC EFFECTS. CONTAINS A CHEMICAL WHICH MAY DAMAGE THE REPRODUCTIVE SYSTEM.

WHMIS: D2A – Chronic Toxic Effects; D2B – Other Toxic Effects



HMIS & NFPA:

HEALTH	* 2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	C



Legend	
Extreme Danger	4
Serious	3
Moderate	2
Slight	1
Minimal	0
Chronic	*

TDG/DOT: NOT REGULATED

Target Organs: Eyes, skin, blood, liver, kidneys, reproductive system.

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SECTION 4 - FIRST AID MEASURES

Eyes: Immediately flush eye(s) with lukewarm, gently flowing water continuously for at least 20 minutes, while holding the eyelid(s) open. Obtain medical attention immediately.

Skin: Remove contaminated clothing and wash skin with soap and plenty of water for at least 20 minutes. Obtain medical attention if symptoms persist.

Inhalation: Move victim to fresh air. Obtain medical attention immediately.

Ingestion: Obtain medical attention immediately. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point (°C - TCC): Not available.

LEL: Not available.

UEL: Not available.

Hazardous Combustion Products: Oxides of carbon, oxides of phosphorus, oxides of boron.

Autoignition Temperature (°C): Not available.

Extinguishing Media: Dry chemical, carbon dioxide.

Fire Fighting Procedures: Fire-fighters should wear full protective gear with self-contained breathing apparatus (SCBA).

Fire and Explosion Hazards: None known.

Sensitivity to Mechanical Impact: Not available.

Sensitivity to Static Discharge: Not available.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions: Before attempting clean-up, refer to Section 8 personal protection. Contact emergency services and supplier for advice.

Spill Response: Evacuate unprotected and untrained personnel from the area. The spill should be handled by qualified personnel only. Ventilate the area. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Cover spill with a non-combustible material such as vermiculite or other commercially available inorganic absorbent. Cover spill with absorbent until it appears dry. Collect the spilled material and clean up the area. Place waste materials in a closed container suitable for disposal. Refer to Section 13 for disposal considerations.

SECTION 7 – HANDLING & STORAGE

Handling: For industrial or professional use only. As required by employer code. Avoid contact with incompatible materials. Do not get in eyes or on skin or clothing. Do not breathe mists or fumes. Use only in a well-ventilated area or with respiratory protection. Do not swallow. Do not eat, drink, or smoke in work areas. Remove contaminated clothing and discard or wash before reuse. Maintain good industrial hygiene practices.

Storage: As required by employer code. Keep container closed when not in use. Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Maintain good industrial hygiene practices.

SECTION 8 – PERSONAL PROTECTIVE EQUIPMENT & EXPOSURE CONTROLS

Eye/Face Protection: As required by employer code. Avoid contact. Wear chemical safety goggles.

Hand Protection: As required by employer code. Avoid contact. Wear chemical resistant gloves. Select and use gloves based on the results of a workplace exposure assessment. Consult ACGIH or your glove manufacturer for selection of appropriate compatible materials.

Skin Protection: As required by employer code. Avoid contact. Wear appropriate equipment as necessary to prevent exposure. Select and use protective equipment based on the results of a workplace exposure assessment. Consult ACGIH or your equipment manufacturer for selection of appropriate compatible materials.

Respiratory Protection: As required by employer code. Do not breathe fumes. Wear appropriate respiratory protection if ventilation is not adequate. Select and use NIOSH approved respiratory equipment based on the results of a workplace exposure assessment.

Ingestion: Do not swallow. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

Ventilation: Use only in a well-ventilated area or with respiratory protection.

Engineering Controls: Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below exposure limits. Have a safety shower and eye-wash fountain readily available in the immediate work area.



EXPOSURE LIMITS:

<u>Chemical Name</u>	<u>ACGIH TLV 15 min STEL</u>	<u>ACGIH TLV 8 hr TWA</u>	<u>OSHA PEL 8 hr TWA</u>
Sodium phosphate tribasic dodecahydrate	Not available	Not available	Not available
2-Butoxyethanol	Not available	20 ppm (skin)	50 ppm (skin)
Boric acid	6 mg/m ³ (inhalable)	2 mg/m ³ (inhalable)	Not available

SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
pH (100%): 9.5 – 10.5
Vapour Density (Air = 1): Not available
Volatiles (Wt%): Not available
Viscosity: Not available
Solubility in Water: Miscible
Vapour Pressure: Not available
Boiling Point (°C): Not available
Odour Threshold (ppm): Not available

Appearance; Odour: Clear, colourless; mild
Flash Point (°C - TCC): Not available
Autoignition Temperature (°C): Not available
Evaporation Rate (Ether =1): Not available
Upper Explosive Limit (UEL): Not available
Lower Explosive Limit (LEL): Not available
Freezing/Melting Point: Not available
Specific Gravity (water =1): Not available
Coefficient of water/oil: Not available

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SECTION 10 – STABILITY & REACTIVITY

Chemical stability: Stable. Hazardous polymerization will not occur.

Incompatible Materials: Oxidizing agents, strong acids.

Conditions to Avoid: None known.

Hazardous Decomposition Products: Oxides of carbon, oxides of phosphorus, oxides of boron.

SECTION 11 - TOXICOLOGICAL INFORMATION

Routes of Entry: Eyes, Skin, Inhalation, Ingestion

HEALTH EFFECTS FROM ACUTE EXPOSURE:

Eyes: May cause irritation. Symptoms may include redness, pain, and tearing.

Skin: May cause irritation. Symptoms may include localized redness, swelling, itching and pain.

Inhalation: May cause respiratory tract irritation.

Ingestion: May cause irritation of the gastrointestinal tract.

ACUTE TOXICITY DATA:

<u>Chemical & CAS#</u>	<u>RTECS #</u>	<u>Rat - Inhalation 4 hours LC₅₀</u>	<u>Rabbit - Dermal LD₅₀</u>	<u>Rat - Ingestion LD₅₀</u>
Sodium phosphate tribasic dodecahydrate (10101-89-0)	TC9575000	Not available	Not available	7400 mg/kg
2-Butoxyethanol (111-76-2)	KJ8575000	450 ppm	220 mg/kg	470 mg/kg
Boric acid (10043-35-3)	ED4550000	Not available	Not available	2500 mg/kg

HEALTH EFFECTS FROM CHRONIC EXPOSURE:

Prolonged or repeated exposure to 2-Butoxyethanol may cause damage to the liver, kidneys, reproductive system, blood and blood-forming organs. Prolonged or repeated exposure to boric acid may cause harmful effects to the male reproductive system.

Aggravation of Pre-existing Conditions: Insufficient data available.

Skin: Prolonged or repeated exposure can cause drying, defatting and dermatitis.

Irritancy: Hazardous by WHMIS/OSHA criteria.

Sensitization: Insufficient data available.

Reproductive Effects: Hazardous by WHMIS/OSHA criteria. Male laboratory animals exposed to boric acid had damaged testes, sperm production, and fertility.

Teratogenicity: Insufficient data available.

Mutagenicity: Insufficient data available.

Carcinogenicity: Insufficient data available. 2-Butoxyethanol: IARC Group 3 - Not classifiable as carcinogenic to humans. ACGIH A3 - Confirmed Animal Carcinogen.

Toxicologically Synergistic Materials: Not available.

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SECTION 12 - ECOLOGICAL INFORMATION

Environmental Effects: Harmful to the environment or its biological diversity.

Ecotoxicity data:

<u>Trisodium phosphate (7601-54-9):</u>	Blue gill/Sunfish - 96 hour LC50: 220 mg/L Rainbow Trout - 96 hour LC50: 120 mg/L Daphnia magna - 50 hour LC50: 177 mg/L
<u>2-Butoxyethanol (111-76-2):</u>	Blue gill/Sunfish - 96 hour LC50: 1490 mg/L Daphnia magna - 24 hour LC50: 1720 mg/L Fathead minnow - 96 hour LC50: 2137 mg/L
<u>Boric Acid (10043-35-3):</u>	Daphnia magna - 48 hour LC50: 226 mg/L

Ecofate Data: Not determined.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal: Consult applicable regulations and authorities prior to disposal.

SECTION 14 - TRANSPORTATION

Transportation of Dangerous Goods (TDG): NOT REGULATED

US Department of Transportation (DOT): NOT REGULATED

SECTION 15 - REGULATORY INFORMATION

CANADA: The components of this product are listed on the Domestic Substances List (DSL) or are exempt.

This controlled product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

WHMIS Classification: D2A; D2B

Hazardous Products Act - Ingredient Disclosure List (IDL):

<u>Chemical</u>	<u>CAS#</u>	<u>Cut-Off</u>
2-Butoxyethanol	111-76-2	1%
Boric acid	10043-35-3	1%

CEPA (1999) – Priority Substances List (PSL2) & Schedule 1 List of Toxic Substances:

2-Butoxyethanol: May constitute a danger in Canada to human life or health. Review applicable regulatory requirements and consult authorities for additional information.



UNITED STATES: The components of this product are listed on the Toxic Substances Control Act (TSCA) inventory list or are exempt.

OSHA: This product is considered Hazardous as defined by the OSHA Hazard Communication Standard Code of Federal Regulations, 29 CFR 1910.1200.

Title III SARA/EPCRA Sections 311 & 312 - Hazard Categories:

<u>Chemical</u>	<u>CAS#</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>	<u>Acute</u>	<u>Chronic</u>
Sodium phosphate tribasic dodecahydrate	10101-89-0	No	No	No	Yes	No
2-Butoxyethanol	111-76-2	Yes	No	No	Yes	Yes
Boric acid	10043-35-3	No	No	No	Yes	Yes
Polyoxyalkylene decyl ether	68439-30-5	Yes	No	No	Yes	Yes

Title III SARA/EPCRA Section 313 - Toxic Chemicals – Toxic Release Inventory:

CAS# 111-76-2 as glycol ethers - de minimis level 1.0%

Title III SARA/EPCRA Sections 302 & 304 - Extremely Hazardous Substances - Threshold Planning Quantities:

CAS# 111-76-2 as glycol ethers: 1000 lb/454 Kg TPQ

CERCLA - Hazardous Substances – Reportable Quantities:

CAS# 10101-89-0 as sodium phosphate, tribasic: 5000 lb/2270 Kg RQ

CAS# 111-76-2 as glycol ethers: 1000 lb/454 Kg RQ

RCRA: Consult applicable regulations and authorities prior to disposal.

Clean Air Act (CAA):

Glycol ethers are listed as hazardous air pollutants.

Does not contain any Class 1 Ozone depletors.

Does not contain any Class 2 Ozone depletors.

Clean Water Act (CWA):

CAS# 10101-89-0 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

SECTION 16 - OTHER INFORMATION

MSDS Prepared by: Technical Service. Contact supplier for information.

Date: June 1, 2011