

# MATERIAL SAFETY DATA SHEET

Date Issued: 10/08/2008  
MSDS No: LS1005

## TruFlow™ Orthodontic Flux

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** TruFlow™ Orthodontic Flux  
**PRODUCT DESCRIPTION:** White flux paste  
**PRODUCT CODE:** 2010  
**GENERIC NAME:** White Flux

#### MANUFACTURER

Ortho Technology, Inc.  
17401 Commerce Park Boulevard  
Tampa FL 33647  
**Product Stewardship:** 1-800-999-3161

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT(S)	CAS	% BY WEIGHT
Boric Acid	10043-35-3	~ 15 - 30
Potassium Fluoride	7789-23-3	~ 15 - 30
Potassium Tetraborate Tetrahydrate	12045-78-2	~ 15 - 30

See Section 8 for Exposure Limits

**WHMIS CLASS:** D1B, D2A

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Odorless White Paste

#### POTENTIAL HEALTH EFFECTS

**EYES:** This product can cause eye irritation, or eye injury upon prolonged contact.

**SKIN:** This product can produce irritatin, particularly on abraded skin. Prolonged exposure may cause dermatitis.

**INGESTION:** Some components of this product are potentially toxic if ingested, and may cause one or more of the following symptoms and effects: nausea, vomiting, diarrhea, abdominal pain, cramps, gastrointestinal irritation, tachycardia, convulsions, and central nervous system depression.

**INHALATION:** Inhalation of the components and decomposition byproducts of this product does not pose a significant risk to health when the product is used in accordance with instructions and appropriate protective measures (see Section #8). The components/decomposition products may cause one or more of the following symptoms and effects if exposure is excessively high and /or prolonged.

**Acute exposure:** Irritation to the nose, throat, and respiratory tract; cough, nose bleeds, nausea, vomiting, chest tightness, chills, fever, tearing, pneumonitis, and pulmonary edema.

**Chronic exposure:** Abdominal pain and cramps, impaired pulmonary function, liver and kidney damage, and fluorosis (a bone disease characterized by mottled teeth, osteosclerosis, and pain and loss of mobility in joints).

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**MEDICAL CONDITIONS AGGRAVATED:** Pre-existing pulmonary diseases (e.g., bronchitis, asthma), may be aggravated by inhalation overexposure. Chronic overexposure by ingestion or inhalation may aggravate diseases of the liver, kidneys, and the skeletal, nervous, and gastrointestinal systems.

**ROUTES OF ENTRY:** Inhalation, ingestion.

### 4. FIRST AID MEASURES

**EYES:** Flush affected areas with water for at least fifteen minutes. Seek medical assistance if necessary.

**SKIN:** Remove contaminated clothing. Wash affected area with large quantities of water for at least five minutes. Seek medical attention if necessary. Launder or dry-clean clothing before reuse.

**INGESTION:** If subject is conscious, induce vomiting. Seek immediate medical assistance. Never give anything by mouth to an unconscious or convulsive person.

**INHALATION:** If signs and symptoms of toxicity are observed, remove subject from area, administer oxygen, and seek medical attention. Keep the subject warm and at rest. Perform artificial respiration if breathing has stopped.

**NOTES TO PHYSICIAN:** Depending upon the dose, the component potassium fluoride may be toxic. Its concentration in the product is <300 gm/kg. Treat fluoride intoxication symptomatically. Intoxication may occur by ingestion and/or inhalation. No components are absorbed through the skin, although irritation or dermatitis may occur.

### 5. FIRE FIGHTING MEASURES

**EXPLOSION HAZARDS:** This product is non-flammable and non-explosive.

**FIRE FIGHTING PROCEDURES:** If fighting a fire in which these products are present, wear a self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode.

**FIRE EXPLOSION:** This product is non-flammable and non-explosive.

**HAZARDOUS DECOMPOSITION PRODUCTS:** If present in a fire or explosion, potential decomposition byproducts include boron oxide, boron trifluoride, and hydrogen fluoride.

### 6. ACCIDENTAL RELEASE MEASURES

**GENERAL PROCEDURES:** Isolate spilled product and transfer to impervious containers. Avoid contact with skin, eyes, and mucous membranes. Wear appropriate protective equipment (e.g., gloves, chemical goggles) during cleanup and disposal.

### 7. HANDLING AND STORAGE

**HANDLING:** Avoid contact with skin and clothing.

**STORAGE:** Store in a cool, dry place away from incompatible materials (see Section #10)

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### EXPOSURE GUIDELINES

HAZARDOUS COMPONENTS					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Boric Acid	TWA	[1]	[1]		2 mg/m <sup>3</sup>
	STEL				6 mg/m <sup>3</sup>
Potassium Fluoride	TWA	[2]	2.5 [2]	[2]	2.5 [2]
Potassium Tetraborate Tetrahydrate	TWA	[1]	[1]	[1]	[1]
<b>Footnotes:</b>					
1. None					
2. As F					

**ENGINEERING CONTROLS:** Use appropriate ventilation (e.g., dilution, local exhaust) adequate to maintain concentrations of all components to within their applicable standards.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Wear eye protection adequate to prevent eye contact with the product and injury from the hazards of brazing. Plastic-frame spectacles with side shields and filter lenses (shade #3 or #4) are recommended.

**SKIN:** Wear appropriate protective gloves and clothing to prevent skin injury if these products are used with a flame. Avoid flammable fabrics.

**RESPIRATORY:** If an exposure level exceeds an applicable exposure standard, use a NIOSH-approved respirator having a configuration (type of facepiece, filter media, assigned protection factor, etc.) appropriate to the concentration of the contaminant(s) generated. For guidance on selection and use of respiratory protection, consult American National Standard Z88.2 (ANSI, New York, NY 10036 USA).

**WORK HYGIENIC PRACTICES:** To minimize ingestion, wash hands and face before eating, drinking, applying cosmetics or using tobacco.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Solid

**ODOR:** Odorless

**APPEARANCE:** White paste

**COLOR:** White

**pH:** 8.0

**PERCENT VOLATILE:** NA = Not Applicable

**VAPOR PRESSURE:** NA = Not Applicable

**VAPOR DENSITY:** NA = Not Applicable

**BOILING POINT:** >212 F >100 C

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**SOLUBILITY IN WATER:** Soluble

**SPECIFIC GRAVITY:** (H<sub>2</sub>O=1) 1.67

**COMMENTS:** Chemical Type : Mixture

### 10. STABILITY AND REACTIVITY

**STABILITY:** Stable.

**POLYMERIZATION:** Will not occur

**CONDITIONS TO AVOID:** Some components of the product may decompose at elevated temperatures.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Boron oxide, boron trifluoride, and/or hydrogen fluoride.

**INCOMPATIBLE MATERIALS:** Acetic anhydride, alkali and alkali earth metals; zirconium; platinum; bromine trifluoride.

### 11. TOXICOLOGICAL INFORMATION

#### ACUTE

Chemical Name	ORAL LD <sub>50</sub> (rat)	INHALATION LC <sub>50</sub> (rat)
Boric Acid	2600 mg/kg (oral/Rat)	No data available
Potassium Fluoride	245 mg/kg (oral/Rat)	No data available

#### CARCINOGENICITY

**Notes:** The product contains no chemicals classified as potential or demonstrated carcinogens by IARC, NTP, or OSHA.

**GENETIC EFFECTS:** Inorganic fluoride compounds have been demonstrated to induce mutagenic changes in mammalian cell in culture. The significance of these findings to human health risks is unknown.

**REPRODUCTIVE EFFECTS:** In experimental animal studies, inorganic borate compounds and boric acid have been found to cause decreased sperm production and testicular effects in male rats, and development effects in fetuses of exposed female mice. No human reproductive effects attributable to occupational exposure to borates or boric acid have been established.

**MUTAGENICITY:** Inorganic fluoride compounds have been demonstrated to induce mutagenic changes in mammalian cell in culture. The significance of these findings to human health risks is unknown.

### 12. ECOLOGICAL INFORMATION

**COMMENTS:** In its intended manner of use, this product should not be released into the environment, and adverse effects on ecosystems are not anticipated under recommended conditions of use, storage, and disposal.

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### 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Dispose of unused or unusable product in accordance with applicable Federal, State/Provincial, and local regulations.

### 14. TRANSPORT INFORMATION

**COMMENTS:** These products are not Hazardous Substances or Dangerous Goods per USDOT, TDG (Canada), IATA, or IMO regulations.

### 15. REGULATORY INFORMATION

#### UNITED STATES

#### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

**ACUTE:** Yes **CHRONIC:** Yes

**TITLE III NOTES:** This product contains no ingredients in concentrations greater than 1% (for carcinogens 0.1%) regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372.

#### CANADA

**WHMIS CLASS:** D1B, D2A

**CANADA INGREDIENT DISCLOSURE LIST:** Fluoride compounds, inorganic, n.o.s.

**COMMENTS** Potassium Tetraborate Tetrahydrate is listed on the USEPA TCSA Inventory and Canadian DSL as its anhydrous form, Potassium Tetraborate, CASRN 1332-77-0.

### 16. OTHER INFORMATION

**REASON FOR ISSUE:** New MSDS Format

**APPROVED BY:** J.Hutchins **TITLE:** QA/RA Director

**PREPARED BY:** T.Swan

**INFORMATION CONTACT:** 1-800-999-3161

**REVISION SUMMARY:** New MSDS

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