

MATERIAL SAFETY DATA SHEET

Date Issued: 10/08/2008
 MSDS No: LS1005
 Date Revised: 08/01/2013
 Revision No: 1

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	Wt. %
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).

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 sketetal, nervous, and gastrointestinal systems.

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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 ³	ppm	mg/m ³
Boric Acid	TWA	[1]	[1]		2 mg/m ³
	STEL				6 mg/m ³
Potassium Fluoride	TWA	[2]	2.5 [2]	[2]	2.5 [2]
Potassium Tetraborate Tetrahydrate	TWA	[1]	[1]	[1]	[1]
Footnotes:					
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

SOLUBILITY IN WATER: Soluble

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SPECIFIC GRAVITY: (H₂O=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 ₅₀ (rat)	INHALATION LC ₅₀ (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.

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

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(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: Updated Chemical Composition

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

PREPARED BY: T.Swan

INFORMATION CONTACT: 1-800-999-3161

REVISION SUMMARY: This MSDS replaces the 08/01/2013 MSDS.

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