

LTS RESEARCH LABORATORIES, INC.  
MATERIAL SAFETY DATA SHEET  
YTTERBIUM FLUORIDE-CALCIUM FLUORIDE SOLUTION

GENERAL

MANUFACTURER/SUPPLIER: LTS RESEARCH LABORATORIES, INC.

COMPANY'S STREET: 37 RAMLAND ROAD  
COMPANY'S CITY: ORANGEBURG  
COMPANY'S STATE: NEW YORK  
COMPANY'S ZIP CODE: 10962  
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COMPANY'S TEL #: 845-494-2940  
DATE MSDS REVISED: 3/4/2007  
DATE MSDS REVISED: 11/05/12

1. IDENTIFICATION

PRODUCT NAME: YTTERBIUM FLUORIDE-CALCIUM FLUORIDE  
CHEMICAL FORMULA:  $\text{YbF}_3 - \text{CaF}_2$   
CAS NUMBER#: (13760-80-0)-(7789-75-5)

2. HAZARDS INGREDIENTS

HAZARD SYMBOLS: XI  
RISK PHRASES: 36/37/38 IRRITATING TO EYES, RESPIRATORY SYSTEM,  
SKIN  
20/21/22 HARMFUL BY INHALATION, IN CONTACT  
WITH SKIN, IF SWALLOWED

3. PHYSICAL DATA

APPEARANCE: WHITE TO BEIGE POWDER, GRANULES, PELLETS,  
MELTED PIECES  
MELTING POINT: 1157°C  
DENSITY: 8.168 G/C3  
VAPOR DENSITY (AIR=1): N/A  
VAPOR PRESSURE: N/A  
% VOLATILES BY VOLUME: 0  
SOLUBILITY IN H2O: INSOLUBLE  
EVAPORATION RATE: N/A

4. FIRE AND EXPLOSION HAZARDS DATA

FLASH POINT: N/A  
AUTOIGNITION TEMPERATURE: N/A  
FLAMMABLE LIMITS IN AIR:  
UPPER: N/A  
LOWER: N/A

5. EMERGENCY AND FIRST AID PROCEDURES

IN CASE OF CONTACT WITH EYES: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 20 MINUTES. SEEK MEDICAL ADVICE.  
IN CASE OF CONTACT WITH SKIN: IMMEDIATELY WASH WITH SOAP AND WATER FOR AT LEAST 10 MINUTES. SEEK MEDICAL ADVICE.  
INHALATION: REMOVE PERSON FROM AREA OF EXPOSURE. SUPPLY FRESH AIR. PROVIDE ARTIFICIAL RESPIRATION IF NECESSARY. GET MEDICAL ATTENTION.  
INGESTION: GET IMMEDIATE MEDICAL ATTENTION

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#### 6. SPECIAL FIRE FIGHTING PROCEDURES

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PRODUCT IS NOT FLAMMABLE.  
FIRE FIGHTING PROCEDURES: WEAR OSHA/MSHA APPROVED SELF-CONTAINED RESPIRATOR AND FULLY PROTECTIVE IMPERVIOUS SUIT. USE FIRE FIGHTING MEASURES THAT SUIT THE SURROUNDING FIRE.  
UNUSUAL FIRE AND EXPLOSION HAZARD: NOT COMBUSTIBLE. UNDER FIRE CONDITIONS, TOXIC FUMES OF HYDROGEN FLUORIDE (HF) ARE EMITTED.

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#### 7. ACCIDENTAL RELEASE MEASURES

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IF MATERIAL IS RELEASED OR SPILLED: WEAR APPROPRIATE PROTECTIVE GEAR. REMOVE UNPROTECTED PERSON AWAY FROM CONTAMINATED AREA. ENSURE ADEQUATE VENTILATION. DO NOT ALLOW THE MATERIAL TO BE RELEASED TO THE ENVIRONMENT WITHOUT GOVERNMENTAL PERMITS.  
WASTE DISPOSAL METHOD: DISPOSE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

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#### 8. HANDLING AND STORAGE

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HANDLING: KEEP CONTAINER TIGHTLY CLOSED  
STORAGE: STORE IN A COOL, DRY PLACE. DO NOT STORE TOGETHER WITH ACIDS.

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#### 9. EXPSURE CONTROL AND PERSONAL PROTECTION

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PERMISSIBLE EXPOSURE LIMIT:  
FOR FLUORIDES (AS F): 2.5 MG/M3  
VENTILATION: CHEMICAL FUME FOR HAZ. CHECMICALS WITH VELOCITY OF MIN. 100 FEET PER MINUTE IS RECOMENDED.  
RESPIRATORY PROTECTION: USE NIOSH/MSHA APPROVED & PROPERLY FITTED RESPIRATOR IF PEL IS EXCEEDED.  
PROTECTION OF HANDS: IMPERVIOUS GLOVES ARE REQUIRED  
EYE PROTECTION: CHEMICAL GOGGLES/SAFETY GLASSES, FULL FACE PROTECTION  
OTHER PROTECTIVE EQUIPMENT: LABORATORY COAT  
WORK HYGIENIC PRACTICES: WASH THOROUGHLY AFTER HANDLING & BEFORE EATING OR DRINKING.

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#### 10. REACTIVITY DATA

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STABILITY:	STABLE
INCOMPATIBILITY:	ACIDS
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR IF STORE AND USED ACCORDING TO SPECIFICATIONS.
HAZ. PRODUCTS OF DECOMPOSITION:	HYDROGEN FLUORIDE

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#### 11. OTHER INFORMATION

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THIS SAFETY DATA SHEET SHOULD BE USED IN CONJUNCTION WITH TECHNICAL SHEETS. IT DOES NOT REPLACE THEM. THE INFORMATION GIVEN IS BASED ON OUR KNOWLEDGE OF THIS PRODUCT, AT THE TIME OF PUBLICATION. IT IS GIVEN IN GOOD FAITH. THE ATTENTION OF THE USER IS DRAWN TO THE POSSIBLE RISKS INCURRED BY USING THE PRODUCT FOR ANY OTHER PURPOSE OTHER THAN THAT FOR WHICH IT WAS INTENDED. THIS DOES NOT IN ANY WAY EXCUSE THE USER FROM KNOWING AND APPLYING ALL THE REGULATIONS GOVERNING HIS ACTIVITY. IT IS THE SOLE RESPONSIBILITY OF THE USER TO TAKE ALL PRECAUTIONS REQUIRED IN HANDLING THE PRODUCT. THE AIM OF THE MANDATORY REGULATIONS MENTIONED IS TO HELP THE USER TO FULFILL HIS OBLIGATIONS REGARDING THE USE OF HAZARDOUS PRODUCTS.

