



Super Daylight Lamp Phosphor

Super Daylight Halophosphor is a general purpose fluorescent lamp phosphor with a high lumen output and a color temperature typical of daytime sunlight in the tropical to temperate regions.

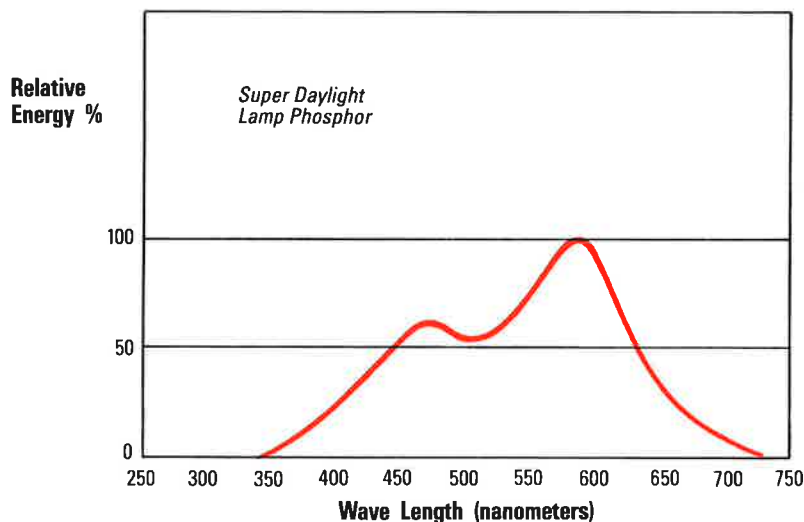
This phosphor provides the desired Super Daylight color when activated by 254 nanometer ultraviolet.

This is a no-mill phosphor designed to attain high lumen efficiency. Smaller particles (see histogram) provide superior mixing and coating characteristics without sacrificing brightness.

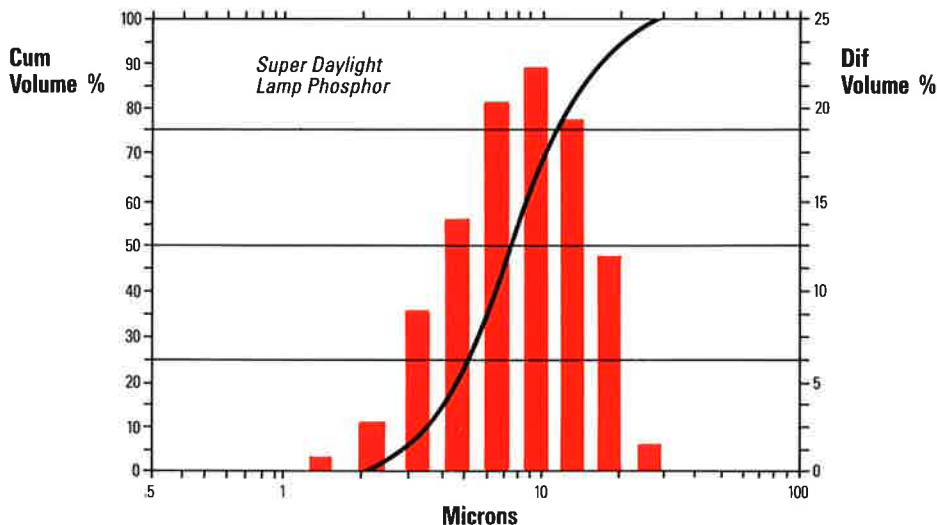
Catalog Name:
Super Daylight Halophosphor
Chemical Type: Calcium
Halophosphate
Catalog Number: 111-3-257
Stoichiometry:
 $(CaMn)_{10}(FCl)_2(PO_4)_6 \cdot Sb$

A variety of discharge color variations are possible in the fluorescence of calcium halapatite phosphors. They can be achieved by varying the Ca/Mn and F/Cl ratios, or by blending two or more phosphors.

Spectral Energy Distribution



Particle Size Histogram



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

Typical Properties Of Super Daylight Lamp Phosphor

Peak Emissions: 478, 579 nm

Approximate Band Width: 81, 63 nm

ICI Color Coordinates:

X = 0.342 Y = 0.360

Decay Time: 10^{-3} to 10^{-4} sec.

Excitation Peak: 250 nm

Median Particle Size: 8.23 nm
(Leeds & Northrup Microtrac II®)

Body Color: White

Absolute Density: 3.16 g/cc



Magnification at 1000X.

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



Daylight Lamp Phosphor

Daylight Halophosphor is a general purpose fluorescent lamp phosphor with a high lumen output and a color temperature typical of daytime sunlight in tropical climates. It offers maximum brightness when activated by 254 nano-meter ultraviolet.

This is a no-mill phosphor designed to attain high lumen efficiency. Smaller particles (see histogram) provide superior mixing and coating characteristics without sacrificing brightness.

Catalog Name:

Daylight Halophosphor

Chemical Type: Calcium

Halophosphate

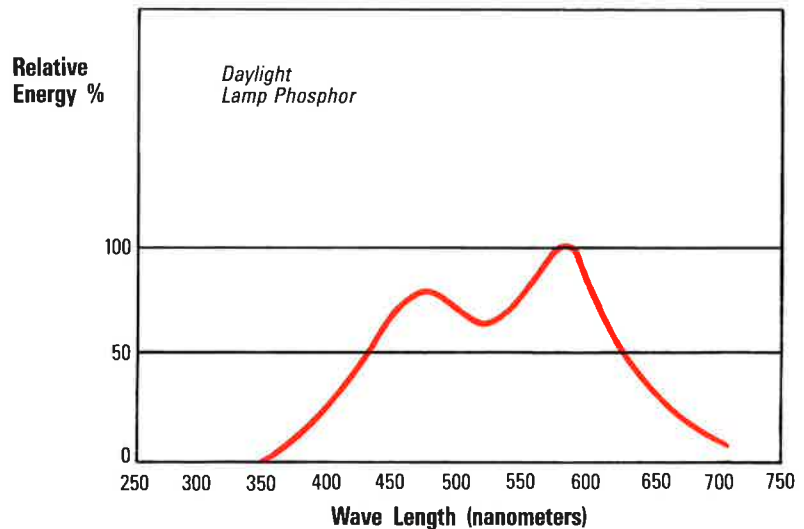
Catalog Number: 111-3-259

Stoichiometry:

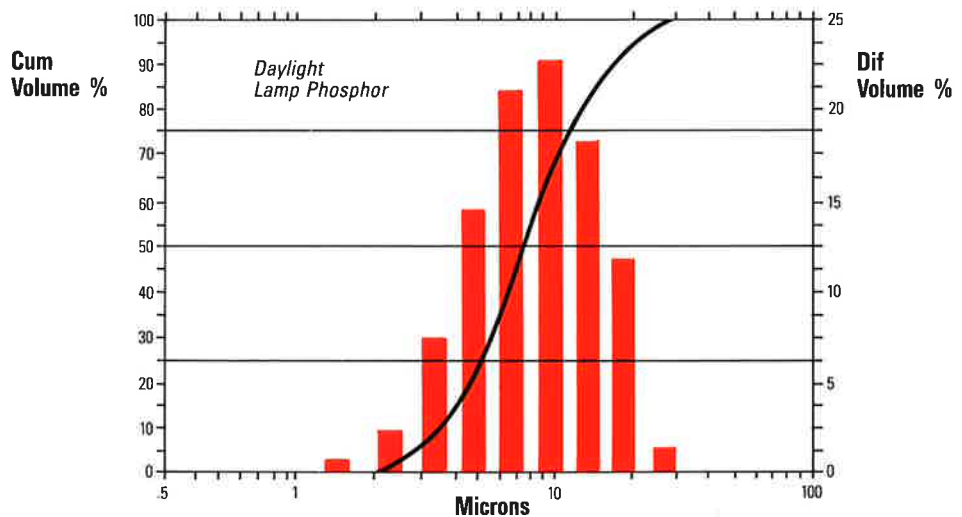
$(CaMn)_{10}(FCl)_2(PO_4)_6: Sb$

A variety of discharge color variations are possible in the fluorescence of calcium haloapatite phosphors. They can be achieved by varying the Ca/Mn and F/Cl ratios, or by blending two or more phosphors.

Spectral Energy Distribution



Particle Size Histogram



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

Typical Properties Of Daylight Lamp Phosphors

Peak Emissions: 478, 579 nm
Approximate Band Width: 89,
59 nm
ICI Color Coordinates:
X = 0.313 Y = 0.337
Decay Time: 10^{-3} to 10^{-4} sec

Median Particle Size: 7.94 nm
(Leeds & Northrup Microtrac II®)
Body Color: White
Absolute Density: 3.16 g/cc
Bulk Density: 0.506 g/cc
(Scott Volumeter)



Magnification at 1000X.

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.

Europe
GENERAL ELECTRIC
Components Marketing & Sales Oper
21a High Street East, Uppingham
Leicestershire LE15 9PY, England
Telef: 0572-823748/9
Telex: 34362 (GELCOS)
Telefax: 0572-823836



GE Components
Marketing & Sales Operation



Cool White Lamp Phosphor

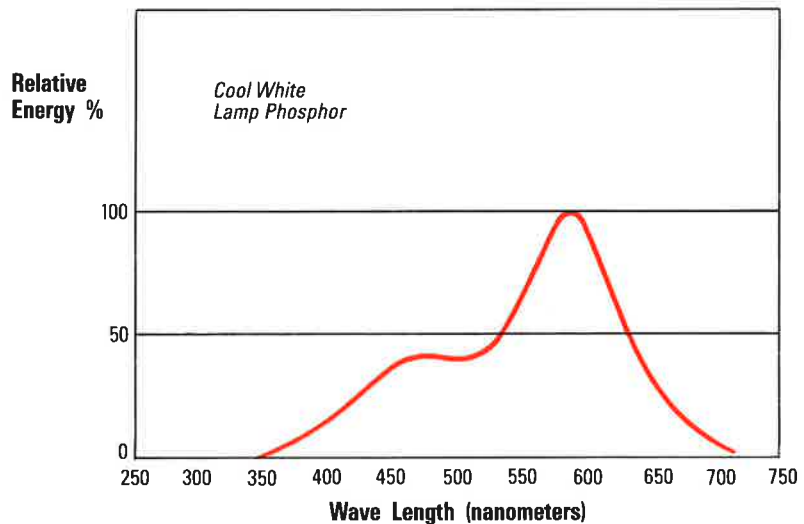
Cool White Halophosphor is a general purpose fluorescent lamp phosphor with a high lumen output and a color temperature typical of daytime sunlight in the temperate climates. It offers maximum brightness when activated by 254 nanometer ultraviolet.

This is a no-mill phosphor designed to attain high lumen efficiency. Smaller particles (see histogram) provide superior mixing and coating characteristics without sacrificing brightness.

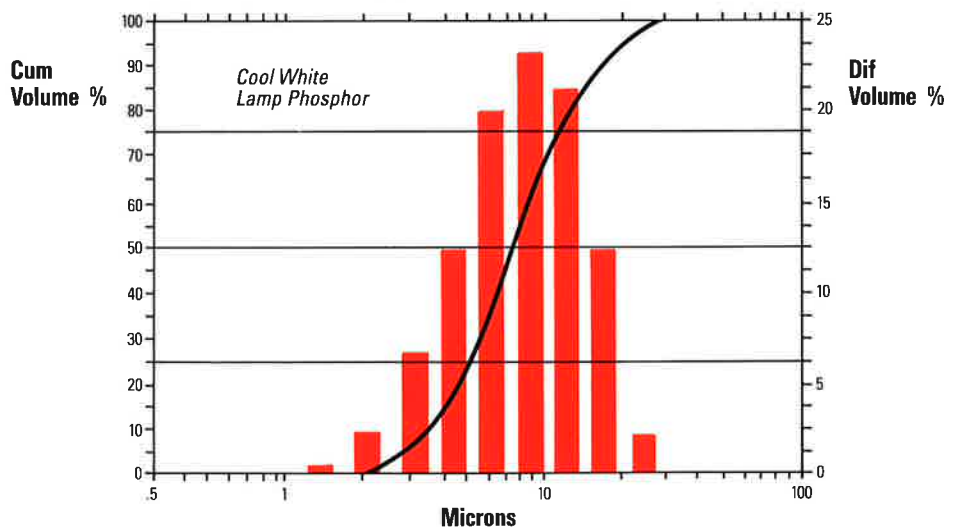
Catalog Name:
Cool White Halophosphor
Chemical Type: Calcium
Halophosphate
Catalog Number: 111-3-260
Stoichiometry:
 $(CaMn)_{10}(FCl)_2(PO_4)_6: Sb$

A variety of discharge color variations are possible in the fluorescence of calcium halophosphate phosphors. They can be achieved by varying the Ca/Mn and F/Cl ratios, or by blending two or more phosphors.

Spectral Energy Distribution



Particle Size Histogram



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

Typical Properties Of Cool White Lamp Phosphor

Peak Emissions: 478, 579 nm
Approximate Band Width: 74, 68 nm
ICI Color Coordinates:
X = 0.372 Y = 0.375
Decay Time: 10^{-3} to 10^{-4} sec.
Excitation Peak: 250 nm

Median Particle Size: 8.58 nm
(Leeds & Northrup Microtrac II®)
Body Color: White
Absolute Density: 3.16 g/cc
Bulk Density: 0.526 g/cc
(Scott Volumeter)



Magnification at 1000X.

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.

Europe

GENERAL ELECTRIC
Components Marketing & Sales Oper.
21a High Street East, Uppingham
Leicestershire LE15 9PY, England

Telef: 0572-823748/9
Telex: 34362 (GELCOS)
Telefax: 0572-823836



GE Components
Marketing & Sales Operation



White Lamp Phosphor

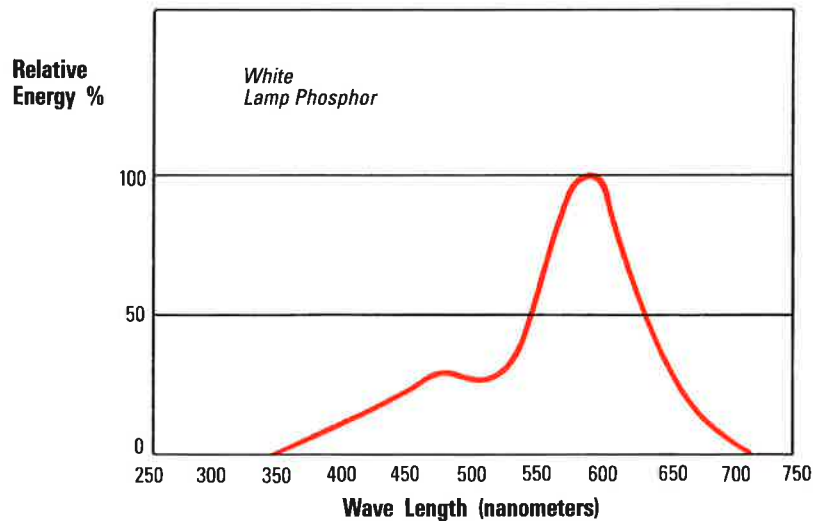
White Halophosphor is a general purpose fluorescent lamp phosphor with a high lumen output and a color temperature typical of afternoon sunlight. It provides maximum brightness when activated by 254 nanometer ultraviolet.

This is a no-mill phosphor designed to attain high lumen efficiency. Smaller particles (see histogram) provide superior mixing and coating characteristics without sacrificing brightness.

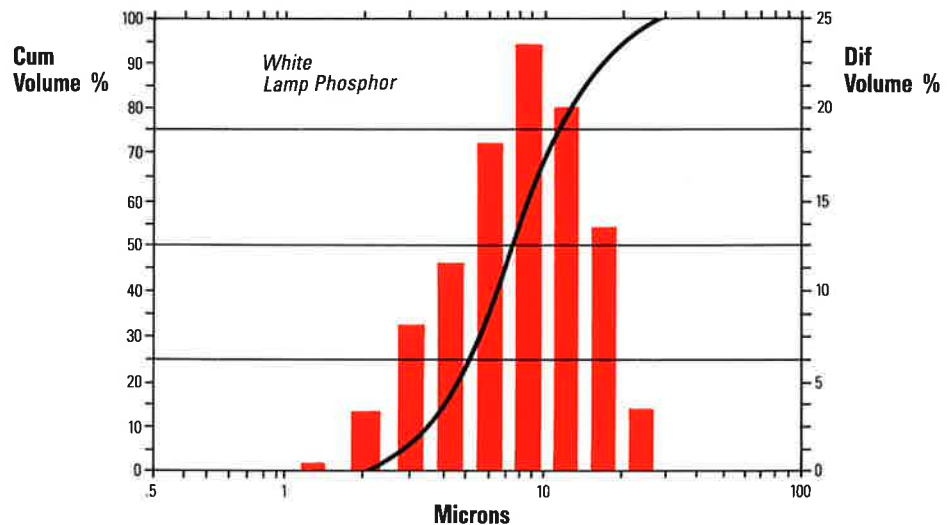
Catalog Name:
White Halophosphor
Chemical Type: Calcium
Halophosphate
Catalog Number: 111-3-262
Stoichiometry:
 $(CaMn)_{10}(FCl)_2(PO_4)_6: Sb$

A variety of discharge color variations are possible in the fluorescence of calcium halophosphate phosphors. They can be achieved by varying the Ca/Mn and F/Cl ratios, or by blending two or more phosphors.

Spectral Energy Distribution



Particle Size Distribution



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

Typical Properties Of White Lamp Phosphor

Peak Emissions: 478, 584 nm

Approximate Band Width: 72, 72 nm

ICI Color Coordinates:

X = 0.409 Y = 0.394

Decay Time: 10^{-3} to 10^{-4} sec.

Excitation Peak: 250 nm

Median Particle Size: 8.73 nm
(Leeds & Northrup Microtrac II®)

Body Color: White

Absolute Density: 3.21 g/cc

Bulk Density: 0.529 g/cc
(Scott Volumeter)



Magnification at 1000X.

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



Europe

GENERAL ELECTRIC
Components Marketing & Sales Oper
21a High Street East, Uppingham
Leicestershire LE15 9PY, England

Telef: 0572-823748/9

Telex: 34362 (GELCOS)

Telefax: 0572-823836

GE Components
Marketing & Sales Operation



Warm White Lamp Phosphor

Warm White Halophosphor is a general purpose fluorescent lamp phosphor with a high lumen output and a color temperature typical of evening sunlight. It offers maximum brightness when activated by 254 nanometer ultraviolet.

This is a no-mill phosphor designed to attain high lumen efficiency. Smaller particles (see histogram) provide superior mixing and coating characteristics without sacrificing brightness.

Catalog Name:

Warm White Halophosphor

Chemical Type: Calcium
Halophosphate

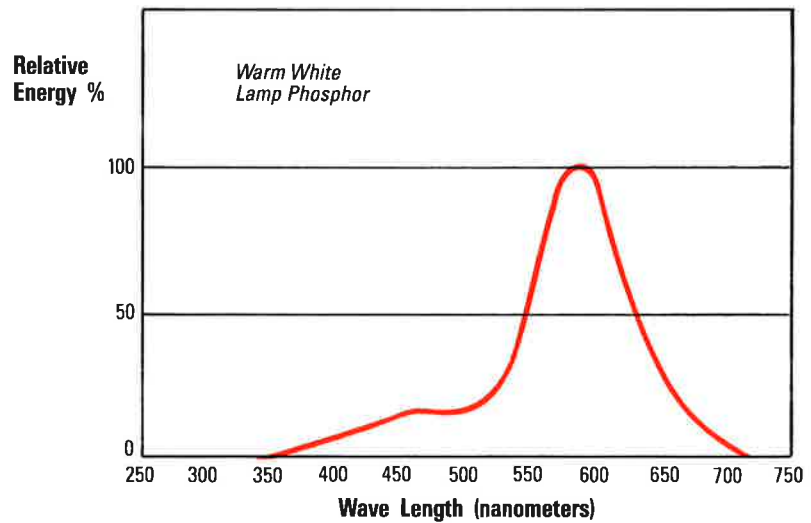
Catalog Number: 111-3-264

Stoichiometry:

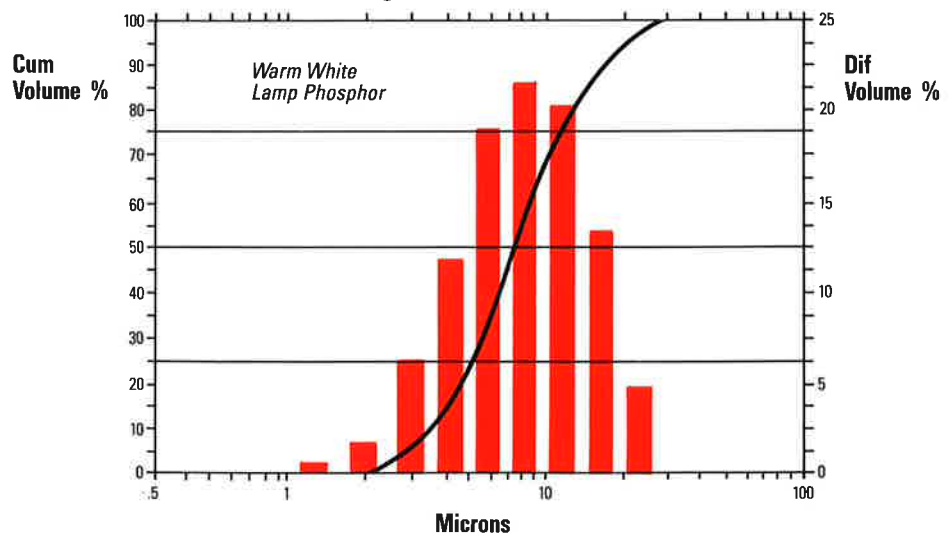
$(CaMn)_{10}(FCl)_2(PO_4)_6 : Sb$

A variety of discharge color variations are possible in the fluorescence of calcium halophosphate phosphors. They can be achieved by varying the Ca/Mn and F/Cl ratios, or by blending two or more phosphors.

Spectral Energy Distribution



Particle Size Histogram



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

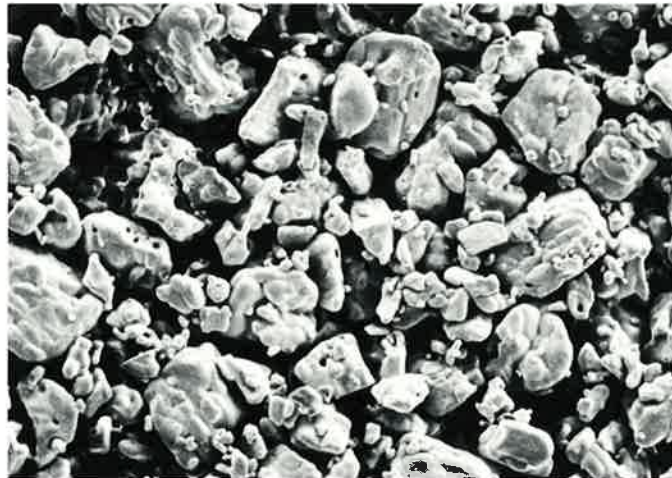
International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

Typical Properties Of Warm White Lamp Phosphor

Peak Emissions: 478, 588 nm
Approximate Band Width: 72, 72 nm
ICI Color Coordinates:
X = 0.440 Y = 0.403
Decay Time: 10^{-3} – 10^{-4} sec.
Excitation Peak: 250 nm

Median Particle Size: 8.92 nm
(Leeds & Northrup Microtrac II®)
Body Color: White
Absolute Density: 3.21 g/cc
Bulk Density: 0.528 g/cc
(Scott Volumeter)



Magnification at 1000X.

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



Red Lamp Phosphor

Europium activated yttrium oxide is one of three rare earth phosphors which are blended to enhance the performance of fluorescent lamps.

Along with green and blue, red triphosphor is combined in suspension to control color rendition and achieve higher luminosity values.

This is a no-mill phosphor made in small, well-saturated particles (see histogram) that provide superior mixing and coating characteristics without sacrificing brightness.

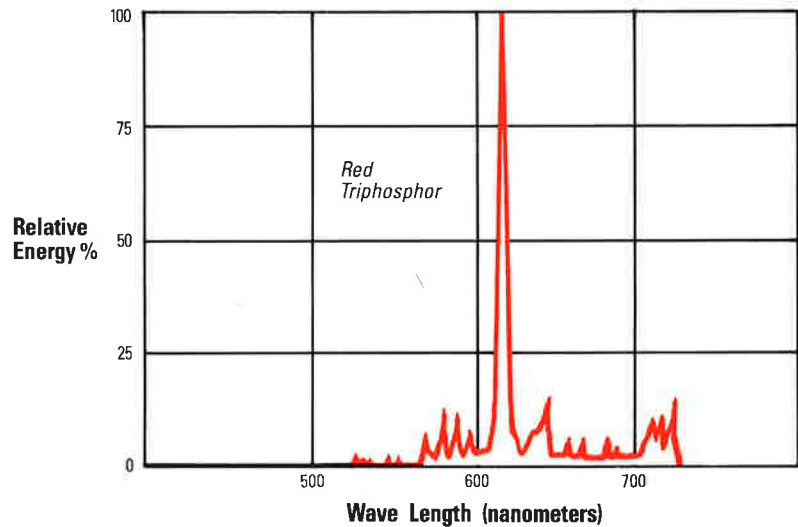
The relative weights of the three triphosphors are varied to achieve the desired color and lumen efficiency in the lamp.

Proportions are indicated below for each color temperature shown:

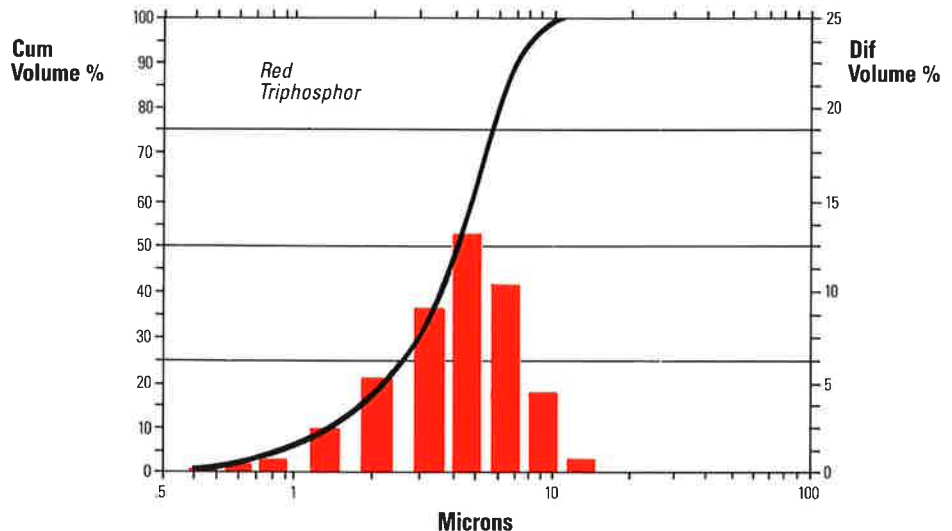
Color Temp	Red	Green	Blue
2700	73%	27%	0%
3000	67%	28%	5%
3500	63%	29%	8%
4100	50%	37%	13%
5000	43%	37%	20%
6500	36%	37%	27%

Catalog Name: Red Triphosphor Component
 Chemical Type: Yttrium Oxide activated with Europium
 Catalog Number: 111-3-250
 Stoichiometry: $Y_2O_3:Eu$

Spectral Energy Distribution



Particle Size Histogram



Even when a given phosphor formula is closely followed, color can vary because of lamp size, wattage, and coating weight. After color measurement, the mixture should be adjusted to achieve the desired lamp color by adding appropriate phosphors to the batch.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

Typical Properties of Red Triphosphor

Peak Emissions: 611 nm
Approximate Band Width: Line
ICI Color Coordinates:
X = 0.643 Y = 0.347
Decay Time: 10^{-3} to 10^{-4} sec.

Median Particle Size:
4.26 micron (Coulter Counter)
Body Color: White
Absolute Density: 5 g/cc



Magnification at 1000X.

Packaging

Standard packaging is in 50 kilogram (14 gallon) fiber drums with a separate waterproof plastic liner.

Availability

Normal lead time for shipment is 8 weeks.

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten, molybdenum, glass, Lucalox[®] ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.

GE Components
Marketing & Sales Operation





Green Lamp Phosphor

Cerium and terbium activated lanthanum phosphate is one of three rare earth phosphors which are blended to achieve peak performance in three band fluorescent lamps.

This is a no-mill phosphor made in small, well-saturated particles (see histogram) that provides superior mixing and coating characteristics without sacrificing brightness.

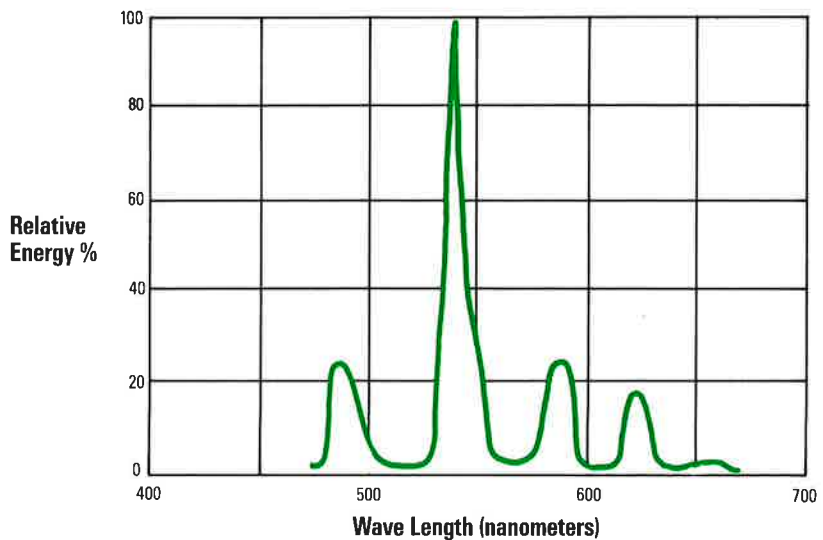
The phosphor is excited by 254 nm ultraviolet rays. Green triphosphor is combined in suspension with red and blue phosphors to control color rendition and provide maximum luminosity values.

The relative weights of the three triphosphors are varied to achieve the desired color and lumen efficiency in the lamp. Proportions are indicated below for each color temperature shown:

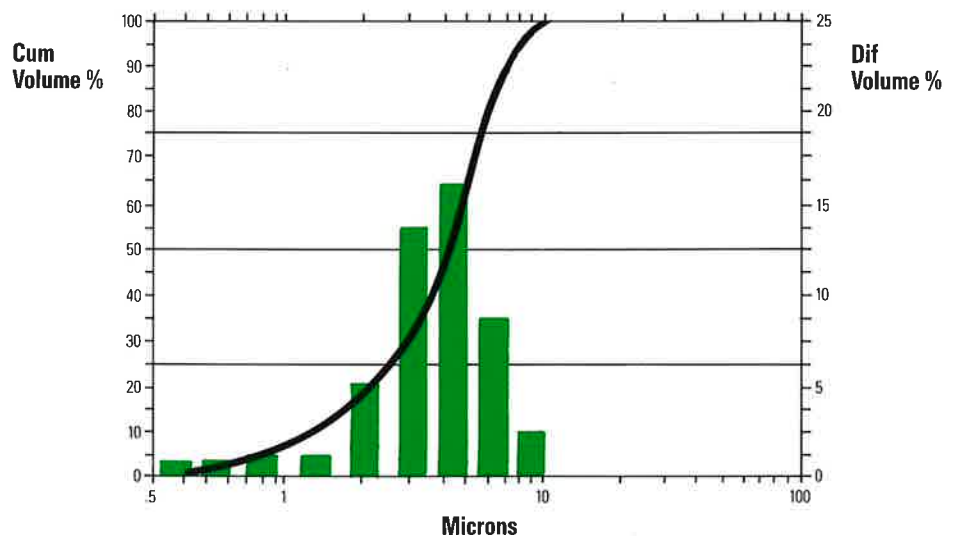
Color Temp	Red	Green	Blue
2700	73%	27%	0%
3000	67%	28%	5%
3500	63%	29%	8%
4100	50%	37%	13%
5000	43%	37%	20%
6500	36%	37%	27%

Catalog Name: Green Triphosphor Component
 Chemical Type: Lanthanum Cerium Terbium Phosphate
 Catalog Number: 111-3-251
 Stoichiometry: (La, Ce, Tb) PO₄

Spectral Energy Distribution



Particle Size Histogram



Even when a given phosphor formula is closely followed, color can vary because of lamp size, wattage, and coating weight. After color measurement, the mixture should be adjusted to achieve the desired lamp color by adding appropriate phosphors to the batch.

Packaging

Standard packaging is in 50 kilogram (14 gallon) fiber drums with a separate waterproof plastic liner.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
Fax: (216) 266-4257

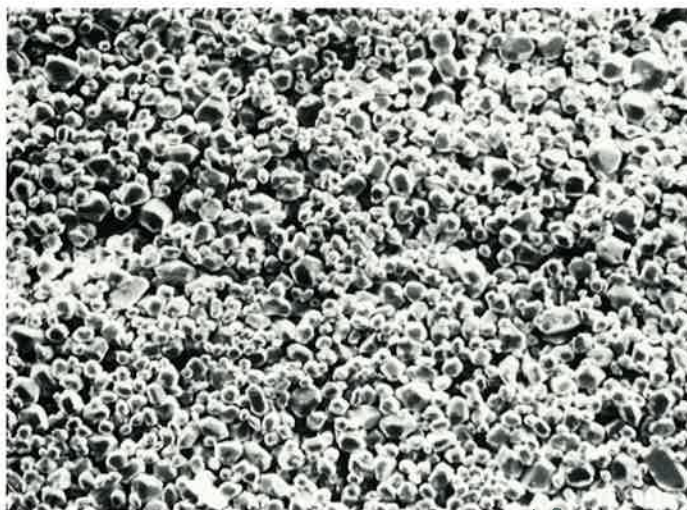
International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
Fax: (216) 266-3372

Typical Properties of Green Triphosphor

Peak Emission: 544 nm
Approximate Band Width: Line
ICI Color Coordinates:
X = 0.351 Y = 0.585
Decay Time: 10^{-3} to 10^{-4} sec.

Median Particle Size:
4.1 micron (Coulter Counter)
Body Color: White
Absolute Density: 5.2 g/cc



Magnification at 1000X.

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for other inorganic chemicals, tungsten and molybdenum wire; glass tubing, bulbs and pressed parts, Lucalox[®] ceramic, Dumet & Cumet wire, EDM cutting wire,

lamp leads and lamp bases, and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



Blue Tri-Band Lamp Phosphor

The blue phosphor formulated by GE Lighting to achieve peak performance in three band fluorescent lamps is strontium, calcium, barium chloride orthophosphate activated with europium.

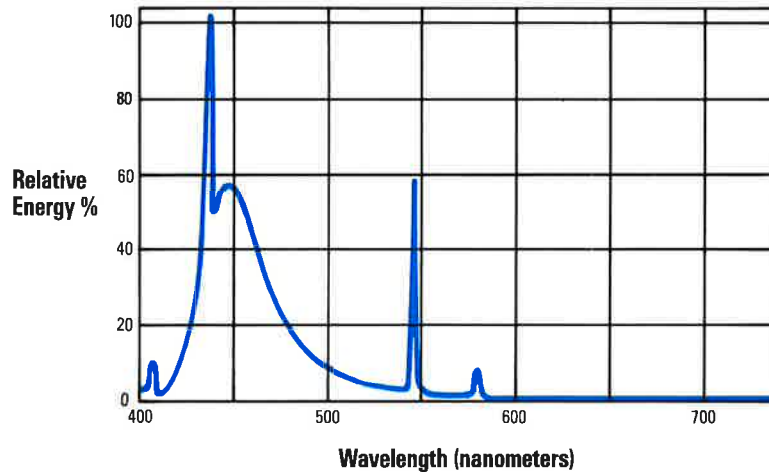
This no-mill rare earth phosphor has small, well-saturated particles (see histogram) that provide superior mixing and coating characteristics without sacrificing brightness.

The phosphor is excited by 254 and 365 nanometer ultraviolet rays. Blue triphosphor is combined in suspension with red and green rare earth phosphors to control color rendition and provide maximum luminosity values. The relative weights of the three triphosphors are varied to achieve the desired color characteristics. Approximate proportions are indicated below for each color temperature shown:

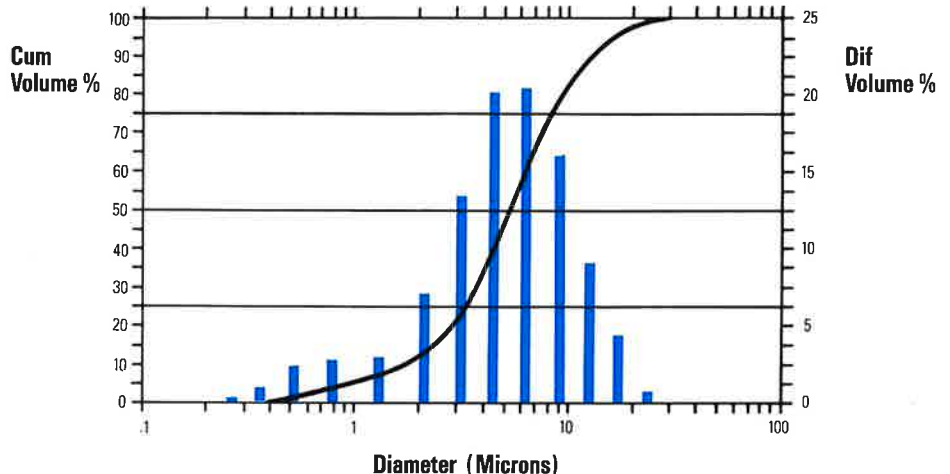
Color Temp	Red	Green	Blue
2700	73%	27%	0%
3000	67%	28%	5%
3500	63%	29%	8%
4100	50%	37%	13%
5000	43%	37%	20%
6500	36%	37%	27%

Catalog Name: Blue Triphosphor Component
 Chemical Type: Strontium, Calcium, Barium Chloride Orthophosphate, Europium Activated.
 Catalog Number: 111-3-252
 Stoichiometry: (Sr, Ca, Ba)₅Cl(PO₄)₃: Eu

Spectral Energy Distribution



Particle Size Histogram



Even when a given phosphor formula is closely followed, color can vary because of lamp size, wattage, and coating weight. After color measurement, the mixture should be adjusted to achieve the desired lamp color by adding appropriate phosphors to the batch.

Packaging

Standard packaging is in 50 kilogram (14 gallon) fiber drums with a separate waterproof plastic liner.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
Fax: (216) 266-4257

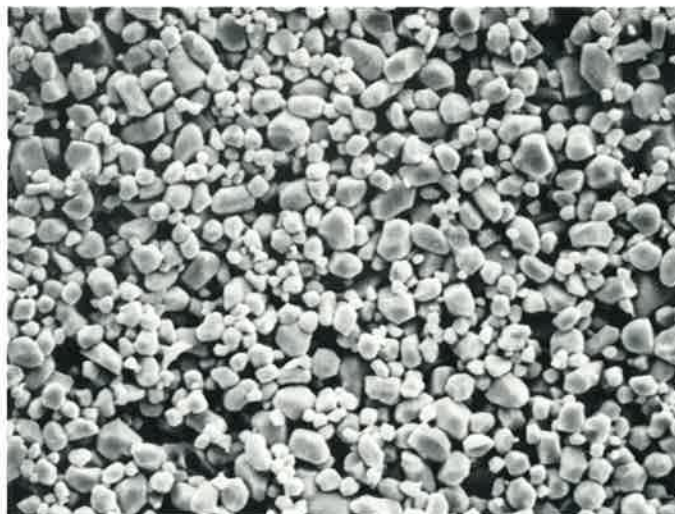
International

GE Lighting Components
Building 315, Nela Park
Cleveland, OH 44112
Phone: (216) 266-2451
FAX: (216) 266-3372

Typical Properties of Blue Triphosphor

Peak Emission: 452 nm
Approximate Band Width: 32 nm
ICI Color Coordinates:
X = 0.1589 Y = 0.0880
Decay Time: 10^{-3} to 10^{-4} sec.

Median Particle Size:
5.26 micron (Microtrac)
Body Color: White
Absolute Density: 4.3 g/cc



Magnification at 1000X.

A Full Line of Lamp Parts and Materials

In addition to lamp phosphors, GE Lighting Components is the source for other inorganic chemicals, tungsten and molybdenum wire; glass tubing, bulbs and pressed parts; Lucalox[®] ceramic, Dumet and Cumet wire; lamp

leads and lamp bases, and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



**GE Lighting
Components**



LAMP PHOSPHOR BLUE HALOPHOSPHOR

GENERAL ELECTRIC COMPANY
LAMP COMPONENTS DIVISION
PRODUCT DATA SHEET 7750-E
SEPTEMBER, 1982
NEW

DESCRIPTION

Catalog Name: Blue Halophosphor
Chemical Type: Calcium Fluorapatite: Sb,Cd
Catalog Number: 111-3-128
Stoichiometry (approx.): $3 [Ca_3 (PO_4)_6] \cdot CaF_2: Sb,Cd$

A variety of color variations are possible in the fluorescence of calcium haloapatite phosphors. They are achieved by varying the Ca/PO₄/F/Cl ratios and/or the Mn concentration, or by blending two or more phosphors. In the case of blue halophosphor, the Mn and Cl concentrations have both been reduced to zero. All of these phosphors have their maximum brightness when activated in the 254 nm region of the ultraviolet.

TOXICITY

The toxicological properties of Blue Halophosphor Lamp Phosphor have not been completely defined. General Electric, therefore, suggests they be handled in such a manner as to avoid dust inhalation, ingestion and skin or eye contact. Part or all of these materials may also have been reported for inventory under the Toxic Substances Control Act (PL-94-469).

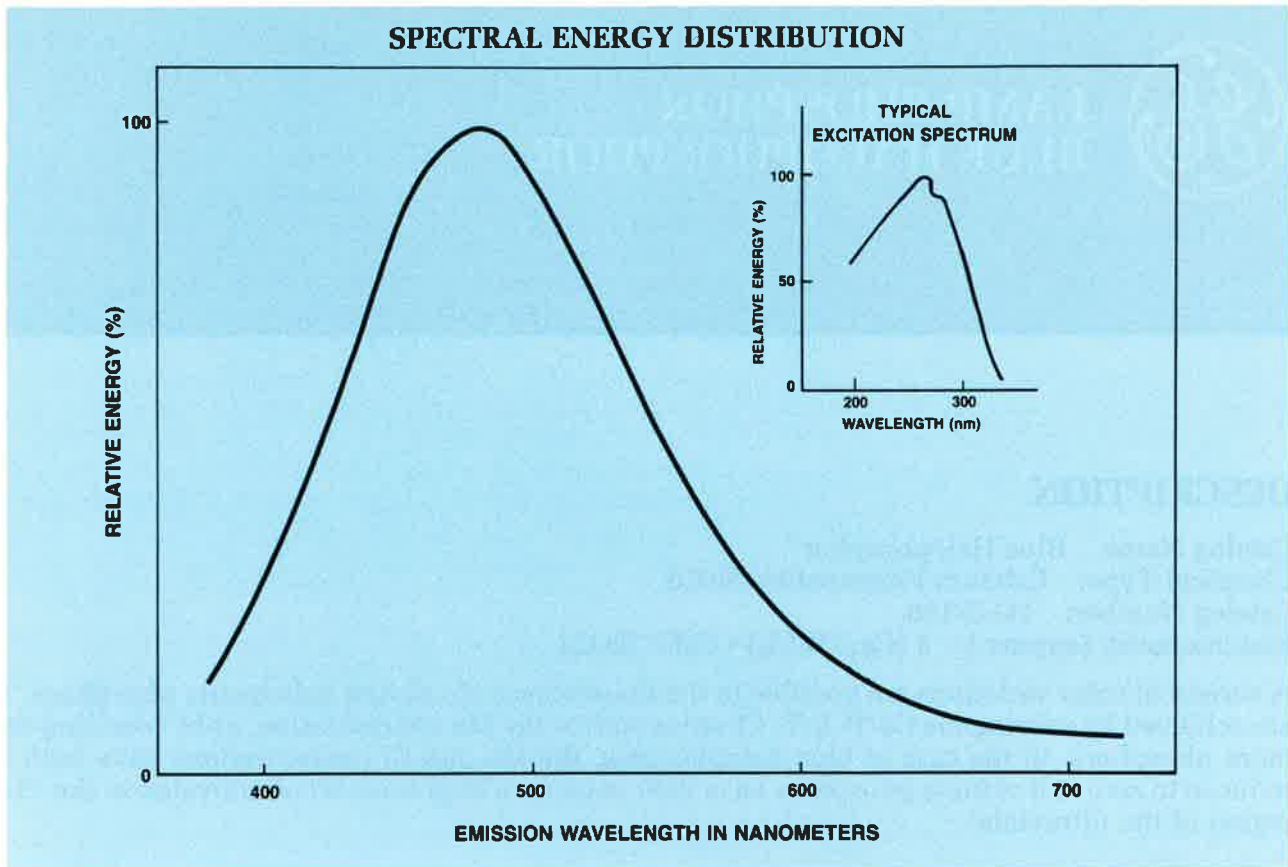
AVAILABILITY

Normal lead times for shipment are 6 to 8 weeks.

TYPICAL PROPERTIES

OPTICAL	PHYSICAL
Peak Emissions: 480 nm	Particle Size: Median Coulter Counter = 11.6 - 12.0 μm
Approx. Band Width: 120 nm	Body Color: White
ICI Color Coordinates: x = 0.220; y = 0.280	Absolute Density: 3.16 g/cc @ 27°C
Decay Time: 10 ⁻³ to 10 ⁻⁴ secs.	Bulk Density*: 485g/l
Excitation Peak: 250nm	*Scott Volumeter

TYPICAL PROPERTIES (Cont'd)



ORDERING

To order Blue Halophosphor Lamp Phosphor, contact your local sales representative or:

Domestic

General Electric Company
Chemical Products Plant
1099 Ivanhoe Road
Cleveland, Ohio 44110
Phone: (216) 266-4611

International

General Electric Company
Lamp Components Division
International Sales
21800 Tungsten Road
Cleveland, Ohio 44117 U.S.A.
Telex: 985569 (GECOLCS EUCD)
Phone: (216) 266-3295

General Electric's Lamp Components Division is the source for tungsten, molybdenum, glass, fused quartz, Lucalox[®] ceramic, phosphors, chemicals, Dumet and Cumet wire, leads, bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products. For information contact:

General Electric Company
Lamp Components Sales Operation
21800 Tungsten Road
Cleveland, Ohio 44117
(216) 266-2451
Telex: 985569



STRONTIUM EUROPIUM BORATE PHOSPHOR

GENERAL ELECTRIC COMPANY
COMPONENTS/QUARTZ
MARKETING & SALES OPERATION
PRODUCT DATA SHEET 7750-1
June, 1987
New

DESCRIPTION

Catalog Name: Strontium Europium Borate (SEB), a UV-emitting phosphor.
Chemical Type: $\text{SrB}_4\text{O}_7:\text{Eu}$
Catalog Number: 111-3-189

SrB_4O_7 activated with divalent Eu emits in the ultraviolet with a peak at 368 nm when excited by 254 nm radiation. It is one of the most efficient commercially available UV-emitting phosphors.

APPLICATIONS

$\text{SrB}_4\text{O}_7:\text{Eu}$ phosphor is usually supplied in organic suspensions, e.g., nitrocellulose binder in butyl acetate. A typical application is in low pressure mercury discharge ultraviolet lamps used in insect traps, certain reprographic uses, mineral lights, and degradation testing of other minerals.

TYPICAL PROPERTIES

$\text{SrB}_4\text{O}_7:\text{Eu}$ phosphor replaces the widely used $\text{BaSi}_2\text{O}_5:\text{Pb}$ (disilicate) ultraviolet phosphor. $\text{SrB}_4\text{O}_7:\text{Eu}$ has approximately 35% greater energy output and its 0-100 hour 90% lamp maintenance is 15% higher than lamps coated with the disilicate phosphor.

Standard Particle Size Distribution

(by Coulter Counter)

MICRON RANGE	WEIGHT PERCENT
0-5	45
5-10	45
10-15	8
Over 15	2
Median Particle Diameter by Coulter Counter . . . 5.4 μm	
Fisher Sub-Sieve Sizer Number 2.8	

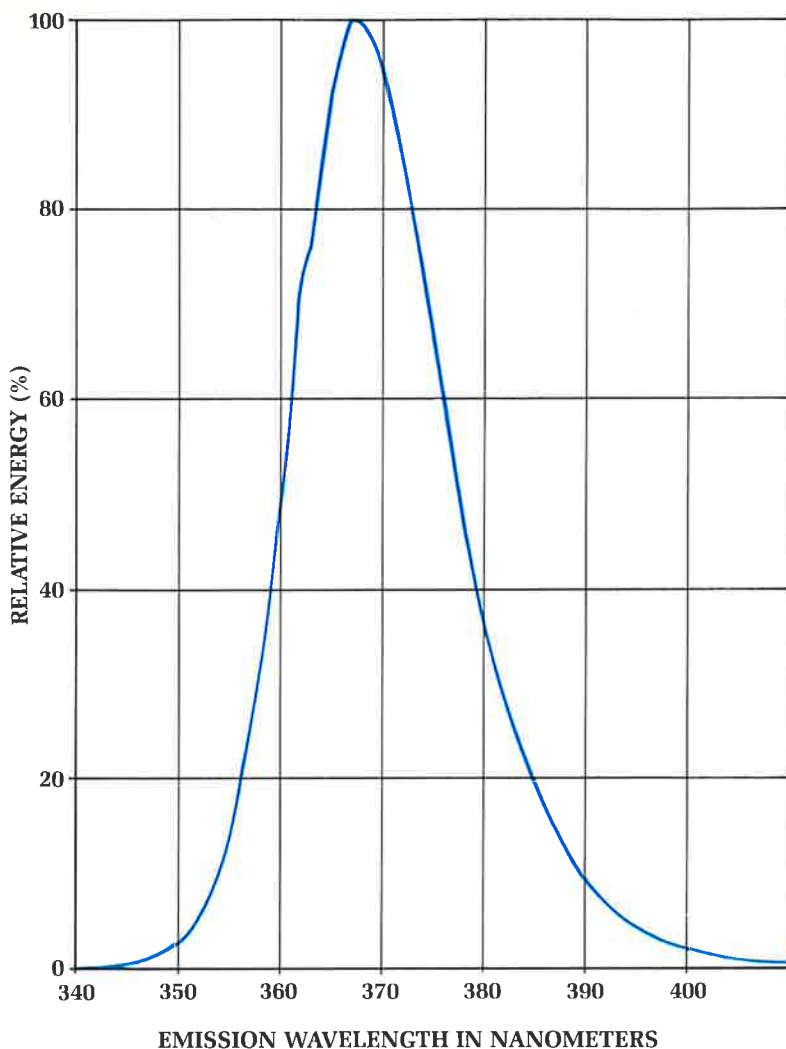
TOXICITY

The toxicological properties of Strontium Europium Borate Phosphors have not been completely defined. General Electric, therefore, suggests they be handled in such a manner as to avoid dust inhalation, ingestion and skin or eye contact. Similarly, normal precautions should be exercised in exposure to binder systems associated with their use. Part or all of these materials may also have been reported for inventory under the Toxic Substance Control Act (PL-94-469). A material safety data sheet for Strontium Europium Borate Phosphor is available upon request.

“GENERAL  ELECTRIC” and “” are

registered trademarks of General Electric Company, U.S.A.
General Electric Company, U.S.A., is not connected with General Electric Company p.l.c.

Spectral Energy Distribution



AVAILABILITY

Normal lead times for shipments are 3 to 6 weeks.

ORDERING

To order SEB Phosphor, contact:

Domestic

General Electric Company
Chemical Products Plant
1099 Ivanhoe Road
Cleveland, Ohio 44110
Phone: (216) 266-4611

International

General Electric Company
Components/Quartz Marketing &
Sales Operation
International Sales
24400 Highland Road
Richmond Heights, Ohio 44143
Telex: 985569 (GECOLCS EUCD)
Phone: (216) 266-3295

General Electric's Components/Quartz Marketing and Sales Operation is the source for tungsten, molybdenum, glass, Lucalox[®] ceramic, phosphors, chemicals, Dumet and Cumet wire, EDM wire, leads, quartz, bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products. For information, contact:

General Electric Company
Components/Quartz Marketing and Sales Operation
24400 Highland Road
Richmond Hts., Ohio 44143
(216) 266-2451
Telex: 985569



LANTHANUM OXYBROMIDE: THULIUM ACTIVATED

GENERAL ELECTRIC COMPANY
LAMP COMPONENTS DIVISION
PRODUCT DATA SHEET 7780-B
SEPTEMBER, 1982
(Replaces 7750-y, 7-1-78)

Order Number Prefix - 60
Chemical Symbol - LaOBr:Tm

Lanthanum oxybromide: thulium (LaOBr:Tm) phosphors represent a major advance in x-ray phosphors. Their exceptionally high densities, energy efficiencies and x-ray absorption result in brightnesses that are more than four times that of the conventional calcium tungstate x-ray phosphors. The use of these new phosphors in x-ray intensifying screens can allow a reduction in patient exposure to medical x-rays by factors of two to six compared to calcium tungstate screens. LaOBr:Tm is a blue emitting phosphor; however, this phosphor emits in both the UV and blue regions of the spectrum.

AVAILABILITY

Production quantities of standard materials are available with a normal lead time of 6 to 8 weeks. Specialty orders for custom particle size or brightness are accepted for quotation.

TYPICAL PHYSICAL PROPERTIES

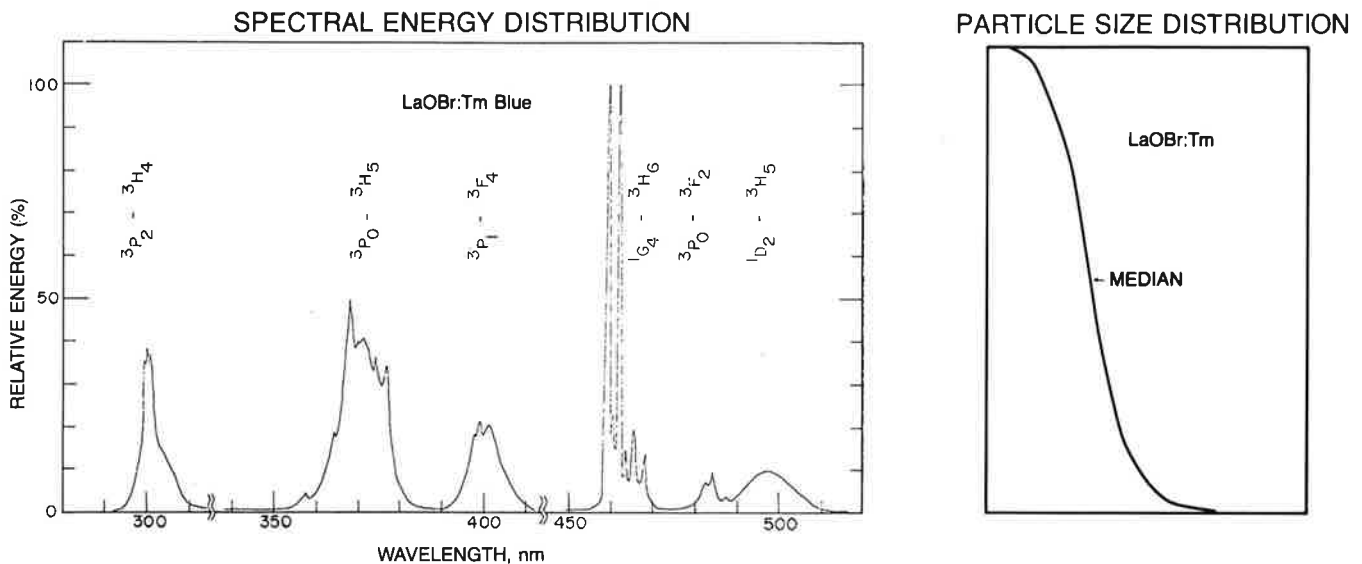
- Particle Size** — LaOBr:Tm phosphors are plate-like single crystals whose weight median diameter as measured on the Coulter Counter can be varied from about 3.0 to 10.0 μ m. See typical distribution curve on reverse side.
- Particle Coating** — These phosphors are available with and without moisture resistant coatings.
- Absolute Density** — 6.28 g/cm³.
- Bulk Density** — Bulk density can vary from about 1.2 g/cm³ to 3.0 g/cm³ depending on surface coating characteristics.
- Slurry pH** — 7
- Body Color** — White

TYPICAL OPTICAL PROPERTIES

- Color** — LaOBr:Tm is a UV-blue emitting phosphor whose emissions are primarily in the UV region of the spectrum.
- Brightness** — Phosphor brightness can be suitably varied by activator changes from about equal to CaWO₄:Pb phosphor to over 4 times CaWO₄:Pb. (All measurements at 90 KVp on plaques with 40 mg/cm² loading.)
- Persistence** — Compared to CaWO₄:Pb under 1-10 MAS x-ray exposure, persistence is comparable to the CaWO₄:Pb.
- X-ray Absorption** — Approximately twice that of CaWO₄:Pb at 80 KVp.

X-RAY SCREEN PROPERTIES

- Speed** — All speed measurements are made at 80 KVp, 1" Al filtration on 5" × 7" screens with 100 μ m thick phosphor layers at 60 volume percent phosphor loading. All comparisons are made to Du Pont Par screens. Speeds can be varied by activator changes from about 1.5 times Par up to 4 times Par using standard speed, conventional medical blue film (e.g., Du Pont Blue Brand) and up to 8 times Par fast blue film.
- Resolution** — Low contrast resolution measurements are made at 80 KVp, 1" Al filtration using calibrated grids at 4 film densities ranging from 0.6 to 1.8. Resolutions equal-to or better-than Par screens can be achieved depending on such factors as particle size, screen thickness and speed. Improved resolution through reduced crossover in film is possible because of the primarily UV emission of this phosphor.
- Radioactivity** — Film is exposed to screens for 100 hours and radioactive spot counts are made statistically. Specifications are 3 spots per cm² per 24 hours.



TOXICITY

The toxicological properties of Lanthanum Oxybromide, Thulium Activated, have not been completely defined. General Electric, therefore, suggests they be handled in such a manner as to avoid dust inhalation, ingestion and skin or eye contact. Part or all of these materials may also have been reported for inventory under the Toxic Substances Control Act (PL-94-469).

ORDERING

To order Lanthanum Oxybromide, Thulium Activated, contact your local sales representative or:

Domestic

General Electric Company
Chemical Products Plant
1099 Ivanhoe Road
Cleveland, Ohio 44110
Phone: (216) 266-4611

International

Europe
GENERAL ELECTRIC
Components Marketing & Sales Oper.
21a High Street East, Uppingham
Leicestershire LE15 9PY, England
Télef: 0572-823748/9
Telex: 34362 (GELCOS)
Telefax: 0572-823836



June 1, 1992

7750-AA

TYPE: 111-3-188

Yttrium Vanadate:Europium

Material Symbol..... YVO4:Eu

Application..... Color Corrector HPMV Lamps,
Electrostatic Deposition

TYPICAL OPTICAL PROPERTIES

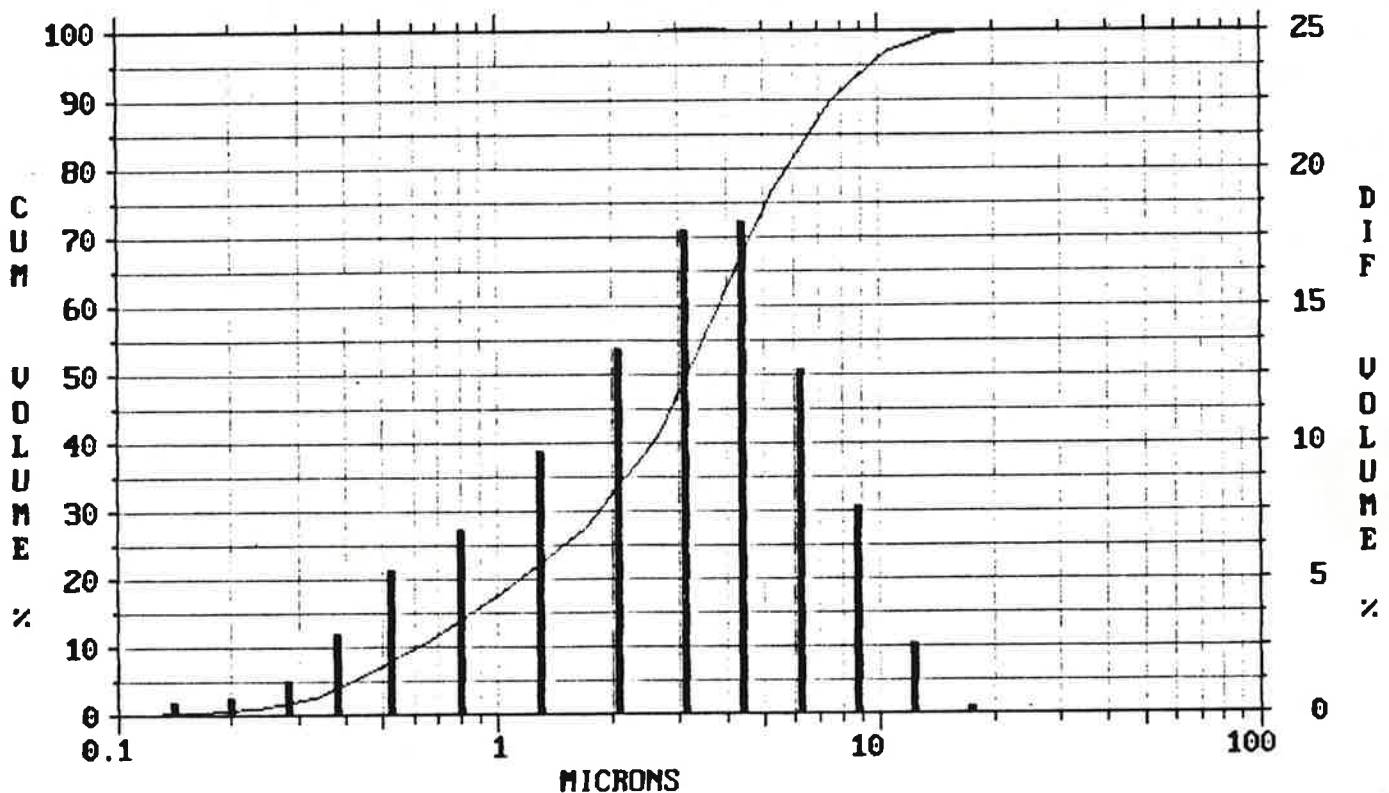
Fluorescence..... Red
Wavelength at Main Peak. 619.2 nm
Line Width..... 0.6 nm
ICI Color Coordinates
..... x = .665
..... y = .328

TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)
10% 50% 90%

MicroTrac 0.62 3.20 7.70
Absolute Density, g/cc...1.38
Body Color..... White

Decay Time.....10⁻³ to 10⁻⁴ sec.



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

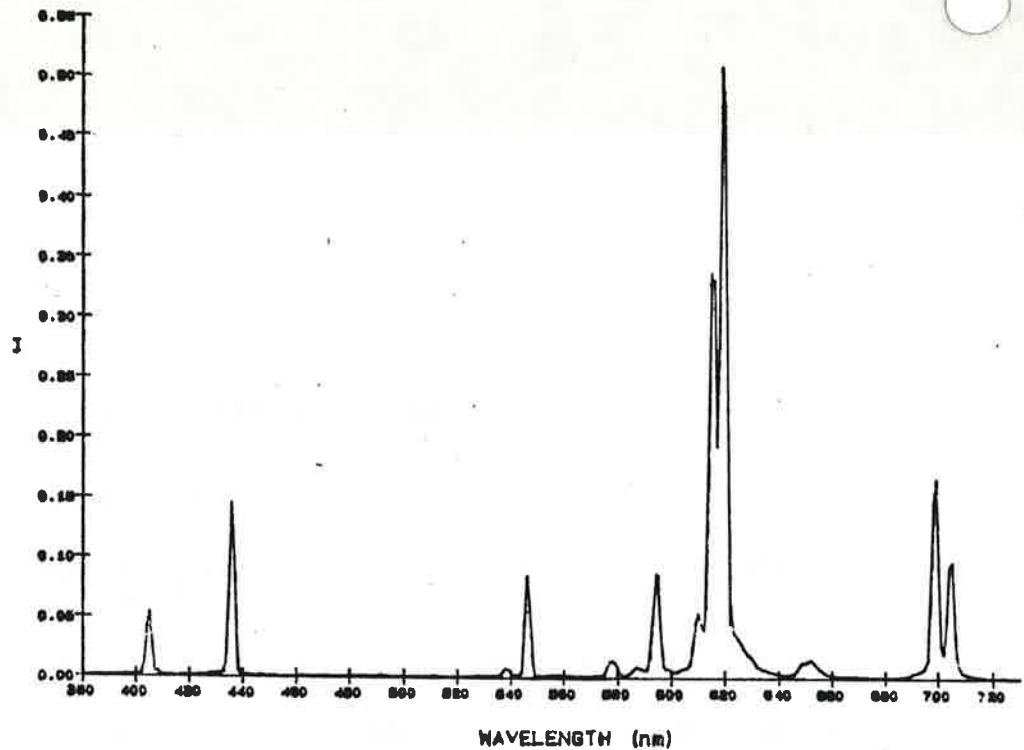
Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

EMISSION CURVE OF YTTRIUM VANADATE



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-DD

TYPE: 111-3-041

Magnesium Fluorogermanate:Manganese

Material Symbol..... Mg₄(F)GeO₆:Mn

Application..... Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

Fluorescence..... Red

Wavelength at Main Peak. 658 nm

Band Width..... 16 nm

ICI Color Coordinates

..... x = 0.611

..... y = 0.265

Decay Time..... 2.3 X 10⁻³ sec.

TYPICAL PHYSICAL PROPERTIES

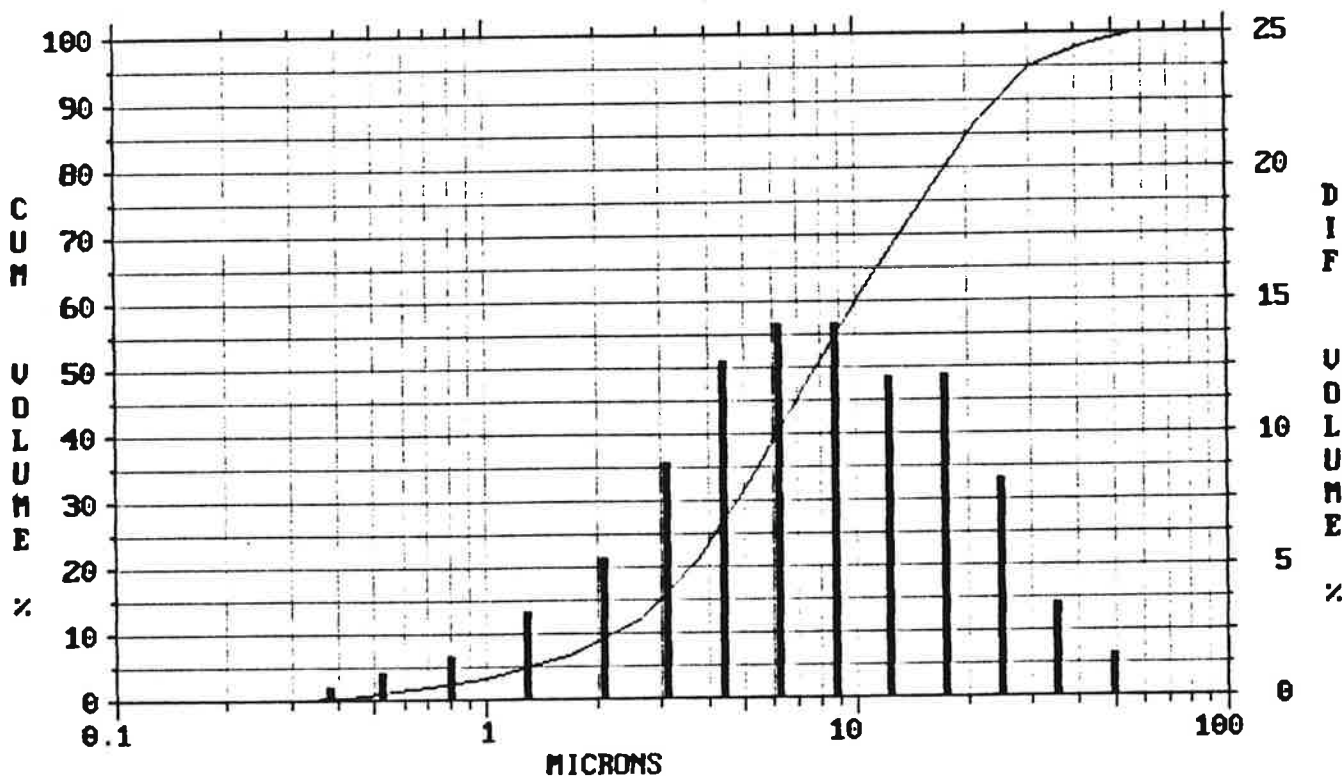
Particle Size Distribution
(size in micrometers)

10% 50% 90%

MicroTrac 2.29 7.92 24.79

Excitation Peak.....305 nm

Body Color.....Off White



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

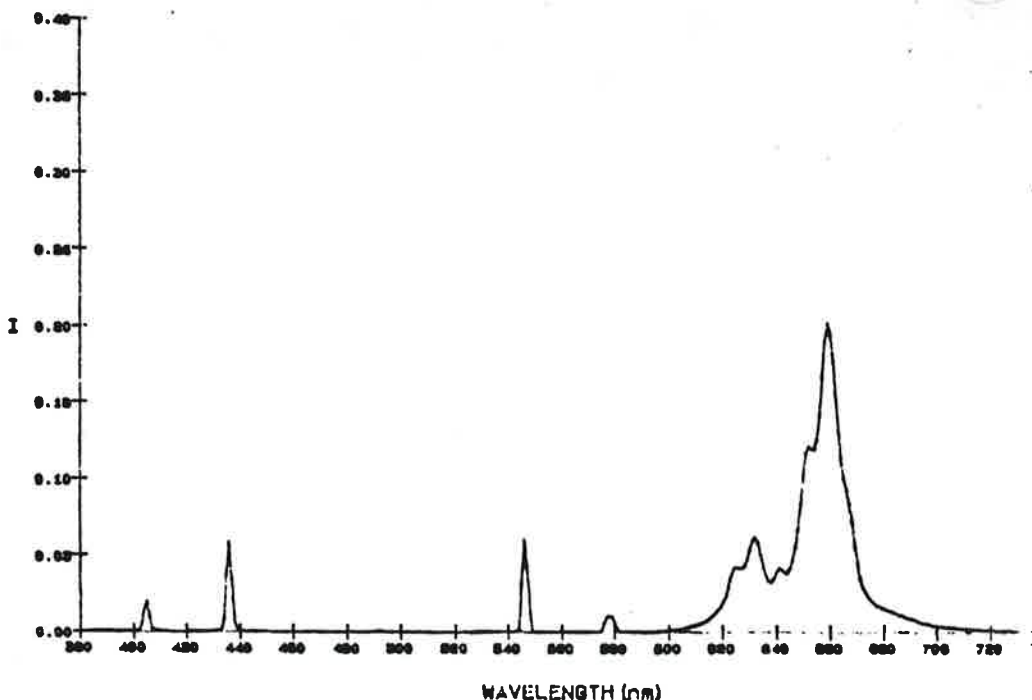
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox[®] ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-BB

TYPE: 111-3-252

Strontium Chlorophosphate (Apatite):Europium

Material Symbol..... (Sr,Ca)5(PO4)3Cl:Eu

Application..... Blue Triphosphor Component

TYPICAL OPTICAL PROPERTIES

Fluorescence..... Blue

Wavelength at Main Peak. 452.1 nm

Line/Band Width.....32 nm

ICI Color Coordinates

..... x = 0.151

..... y = 0.064

Decay Time.....10⁻³ to 10⁻⁴ sec.

TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)

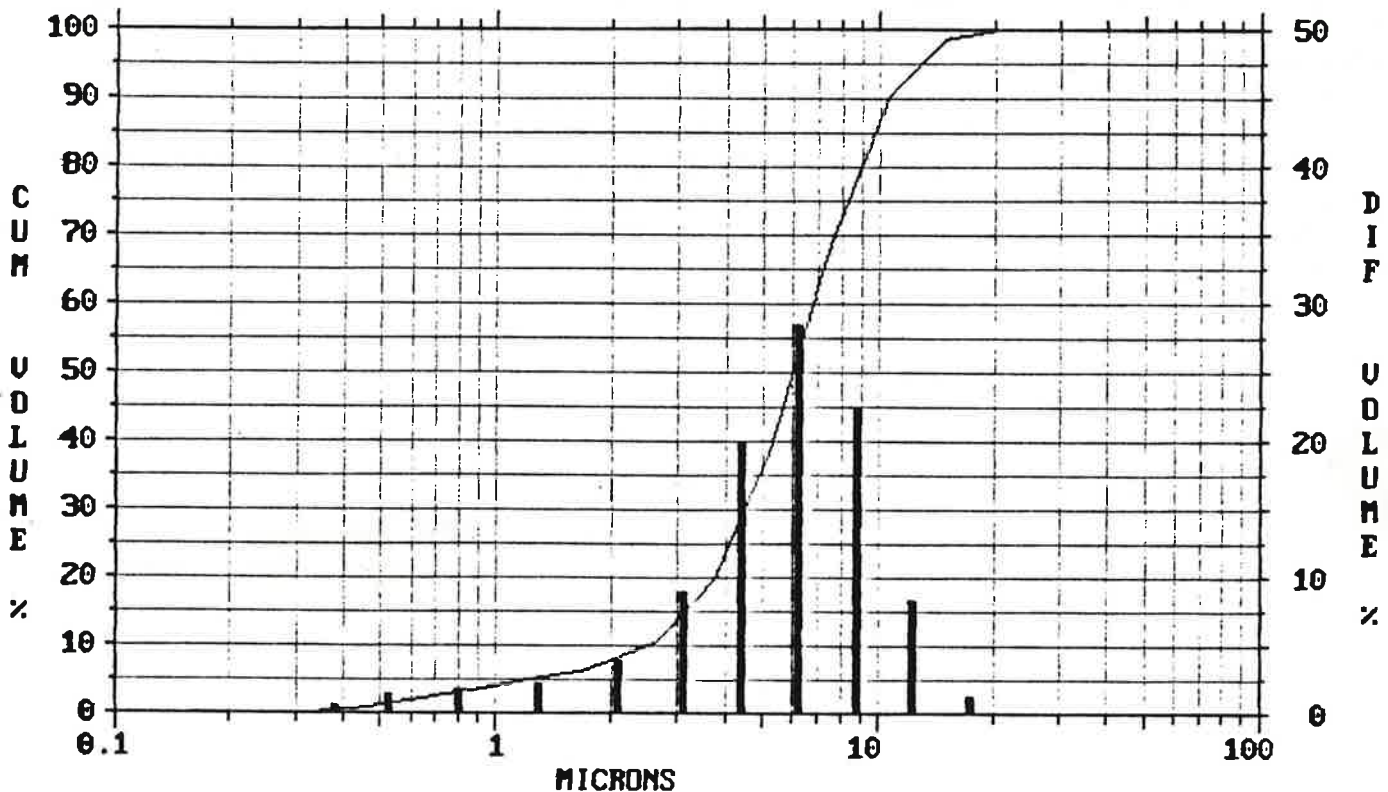
10% 50% 90%

MicroTrac 2.54 6.10 10.52

Absolute Density, g/cc...6.3

Body Color..... White

Excitation Peak.....254 nm



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

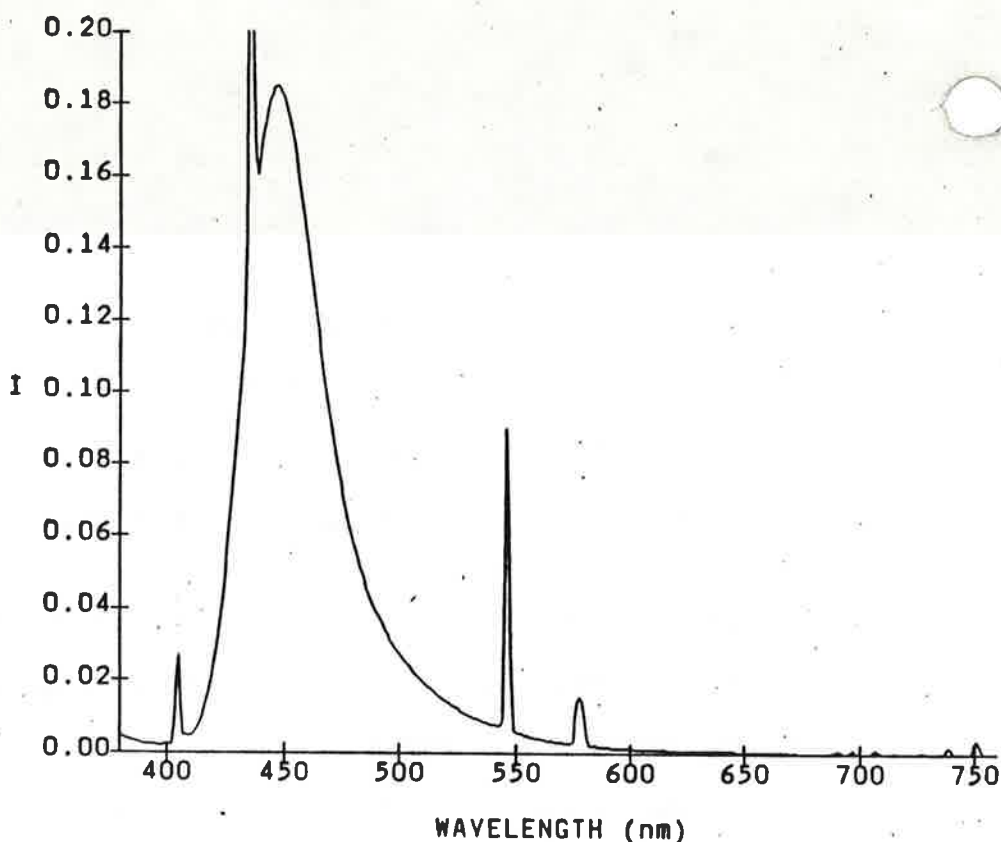
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-CC

TYPE: 111-3-120

Zinc Orthosilicate:Lead Activated

Material Symbol..... (Zn,Mg,Mn)SiO₄:Pb

Application..... Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

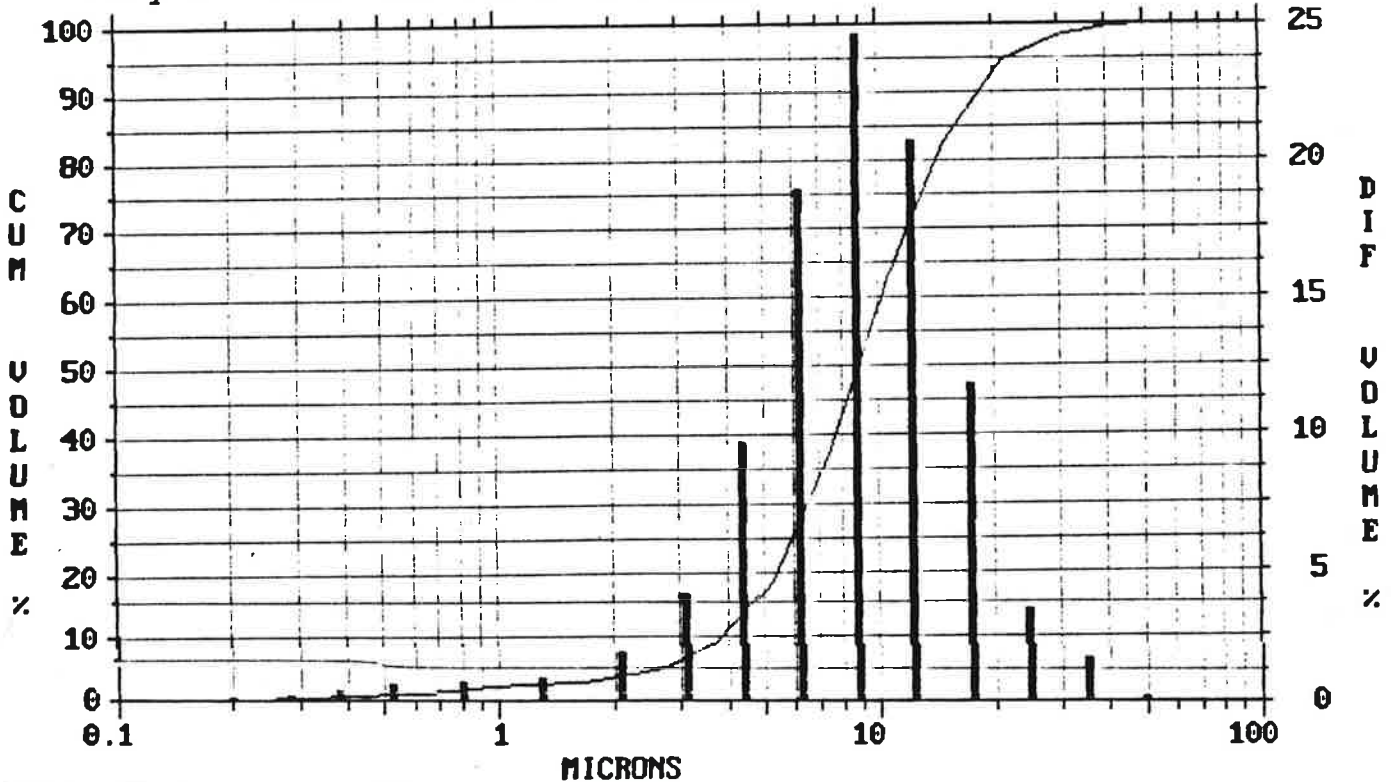
Fluorescence.....Green
Wavelength at Main Peak. 528.0 nm
Band Width..... 41 nm
ICI Color Coordinates
..... x = 0.251
..... y = 0.631

TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)
10% 50% 90%

MicroTrac 3.93 9.04 18.68
Excitation Peak..... 258 nm
Body Color..... White

Decay Time..... 3.5 X 10⁻³ sec.



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

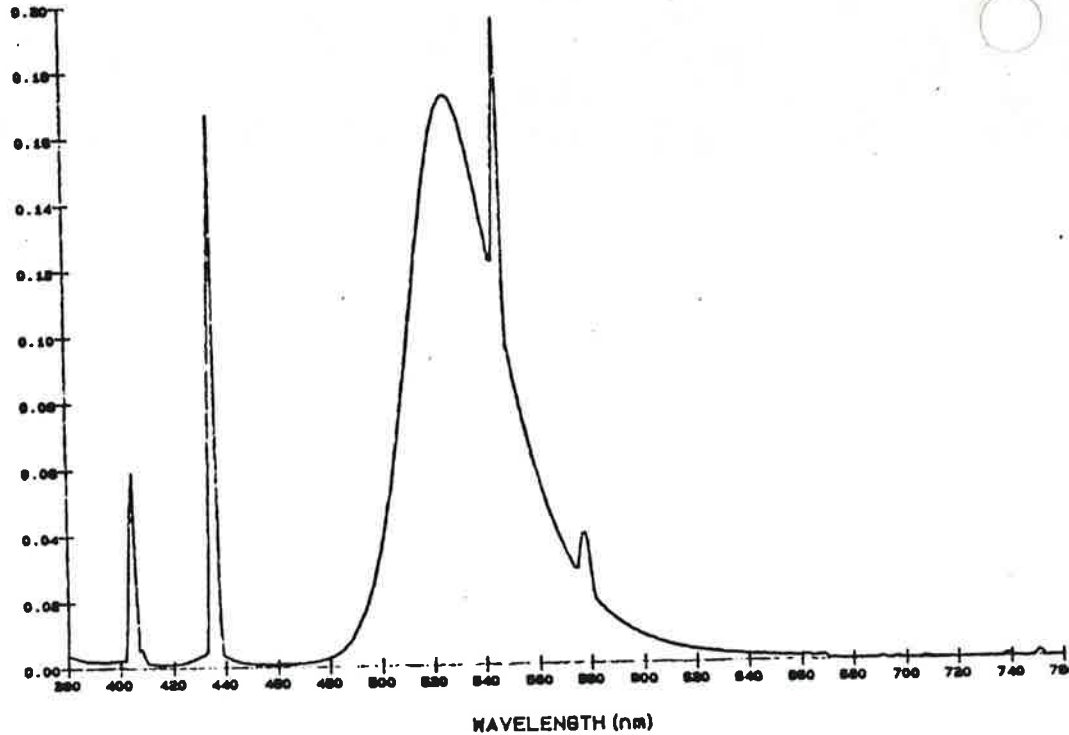
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-EE

TYPE: 111-3-141

Calcium Tungstate: Pb

Material Symbol.....CaWO4:Pb

Application.....Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

TYPICAL PHYSICAL PROPERTIES

Fluorescence.....Blue

Particle Size Distribution
(size in micrometers)

Wavelength at Main Peak....433 nm

10% 50% 90%

Band Width.....114 nm

MicroTrac 2.94 7.41 15.27

ICI Color Coordinates

Excitation Peak.....254 nm

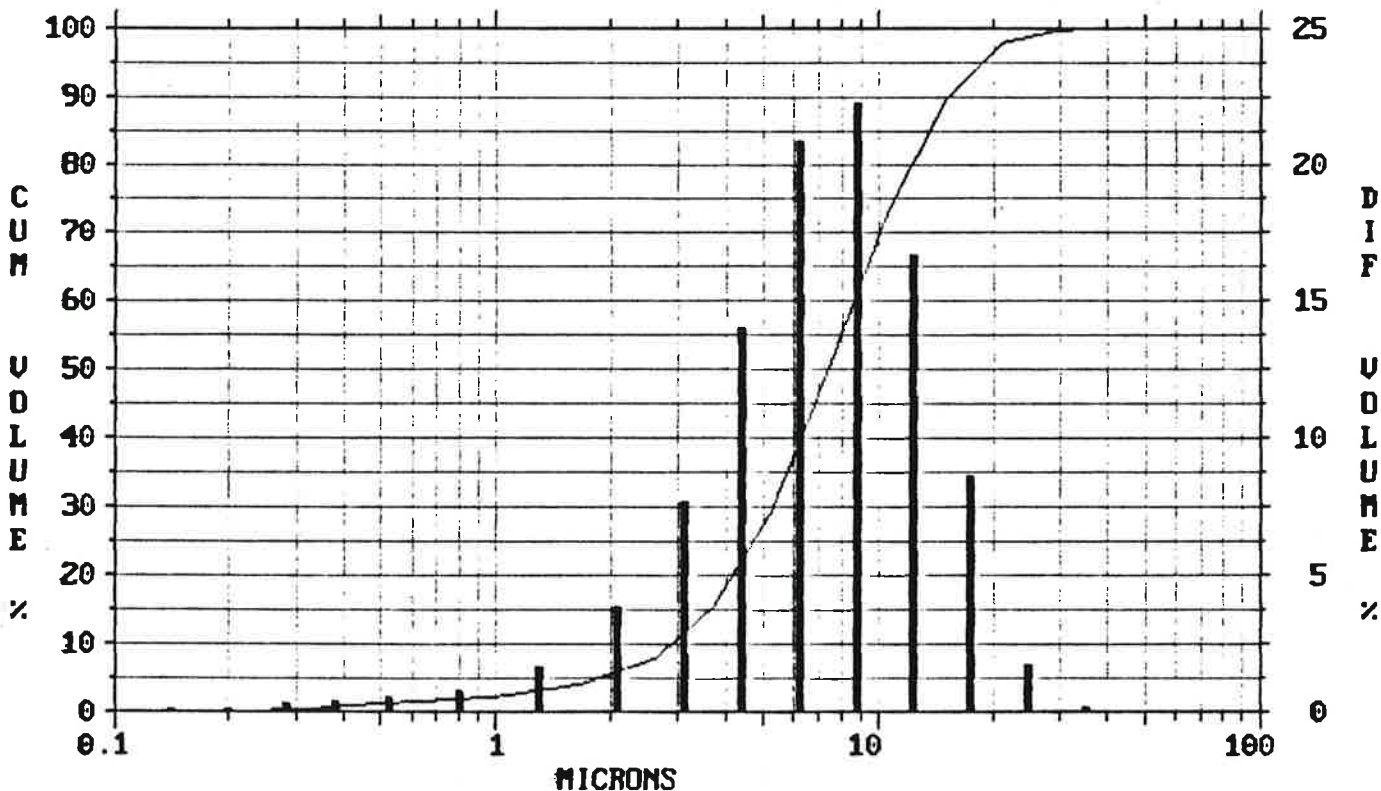
..... x = 0.190

Body Color.....White

..... y = 0.196

Decay Time.....1.2 X 10⁻⁵ sec.

Excitation Peak.....254 nm



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

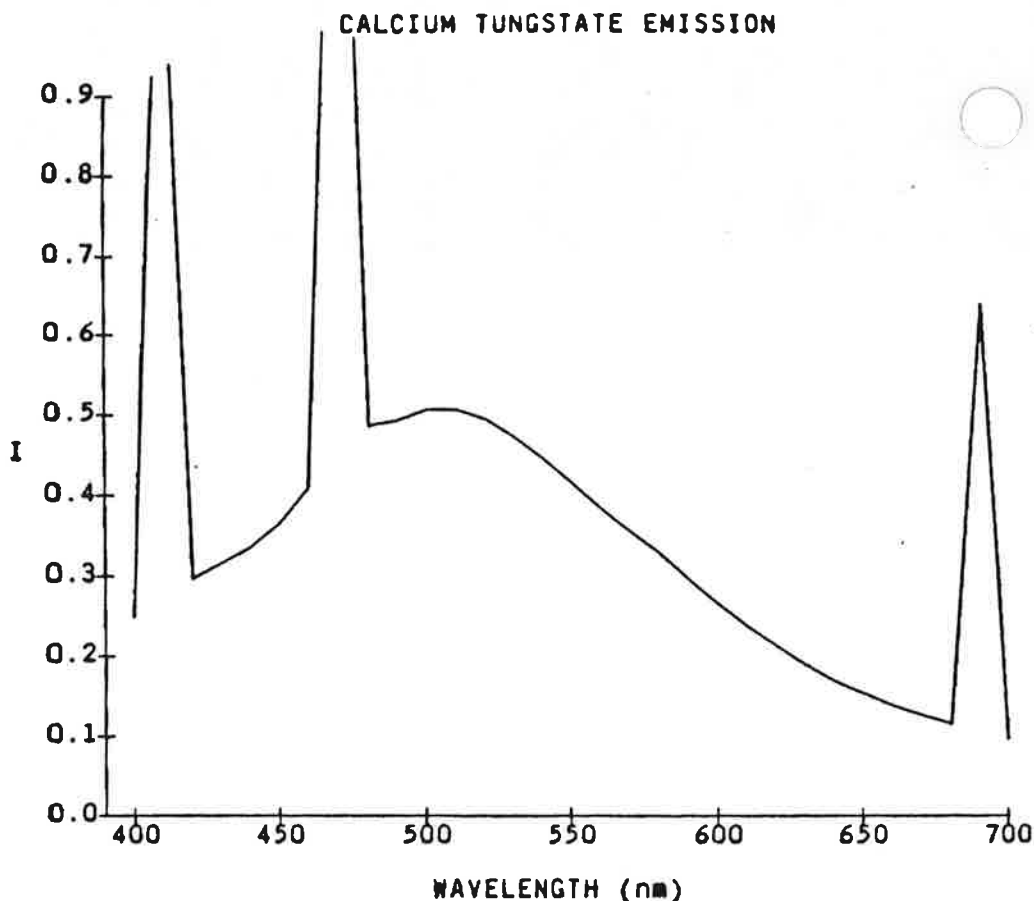
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-FF

TYPE: 111-3-143

Yttrium Vanadate:Europium

Material Symbol..... YVO4:Eu

Application..... Color Corrector HPMV Lamps

TYPICAL OPTICAL PROPERTIES

Fluorescence..... Red

Wavelength at Main Peak. 619.2 nm

Line Width..... 0.6 nm

ICI Color Coordinates

..... x = .665

..... y = .328

Decay Time.....10⁻³ to 10⁻⁴ sec.

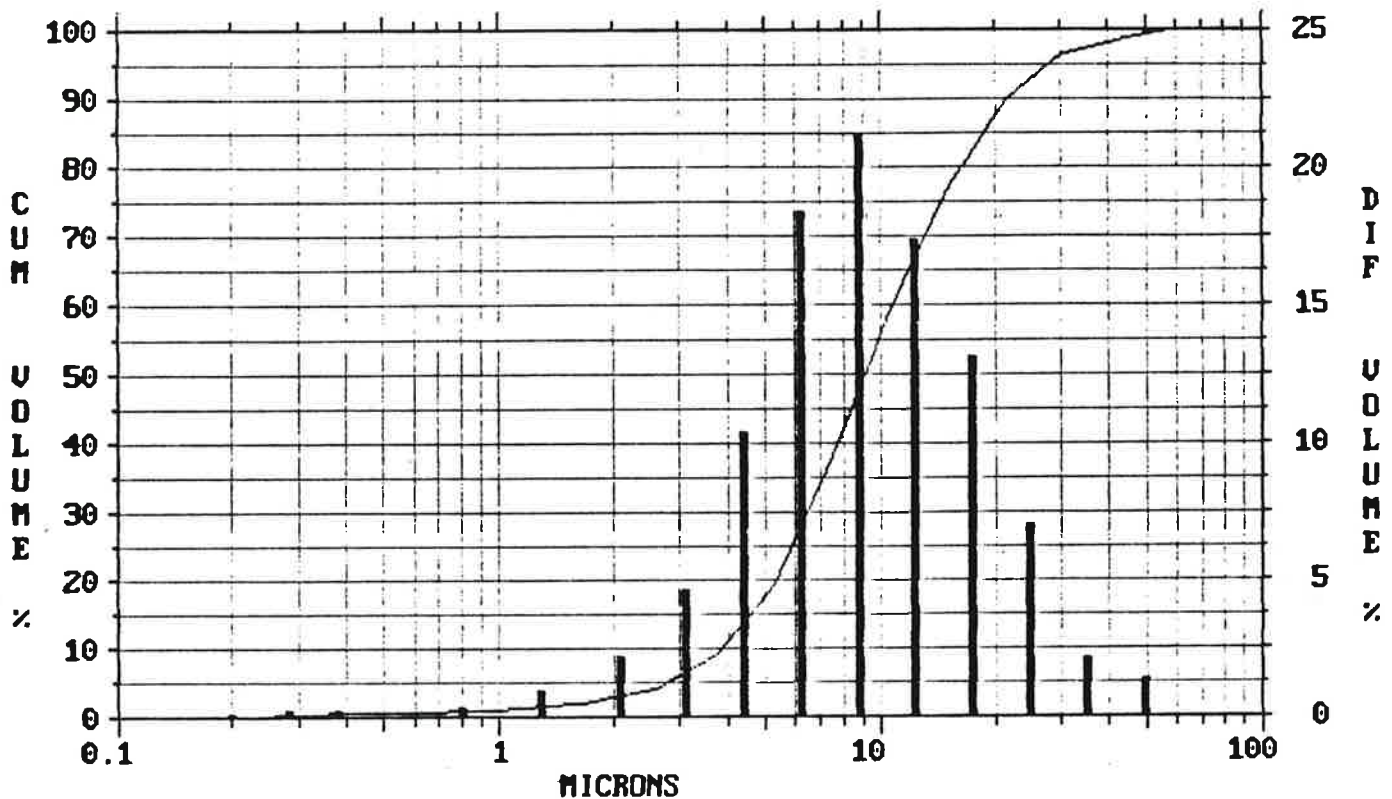
TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)

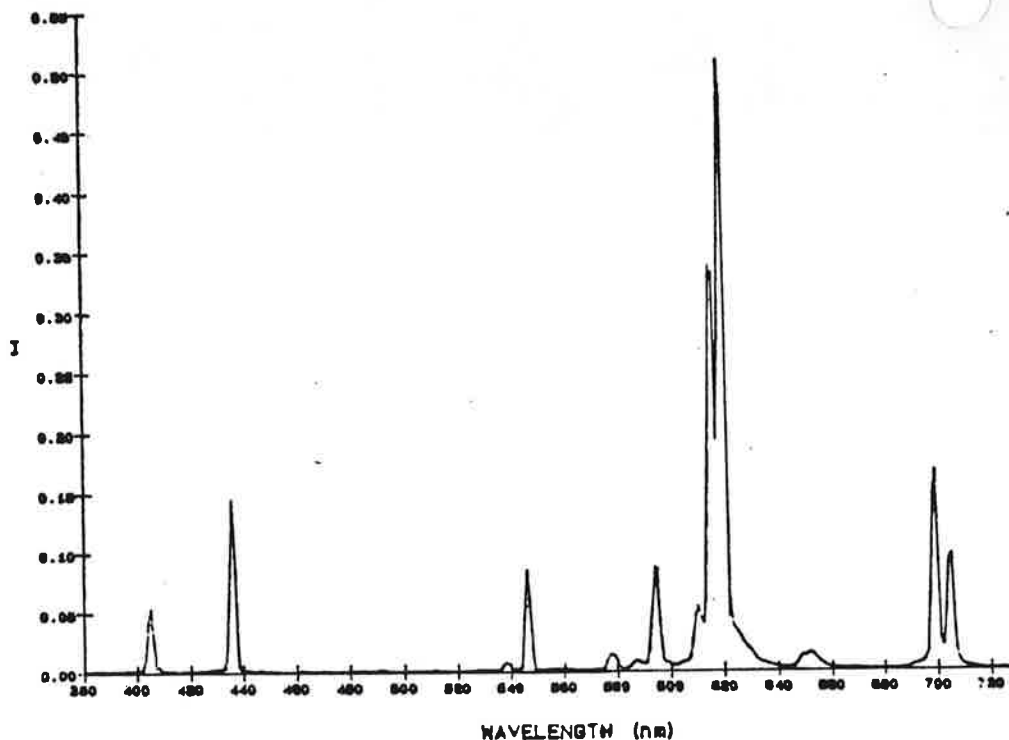
	10%	50%	90%
MicroTrac	3.89	9.25	21.71

Absolute Density, g/cc...1.38

Body Color..... White



EMISSION CURVE OF YTTRIUM VANADATE



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750- GG

TYPE: 111-3-081

Strontium Magnesium Orthophosphate: Sn

Material Symbol.....(Sr,Mg)3(PO4)2:Sn

Application.....Fluorescent Lamps

TYPICAL OPTICAL PROPRTIES

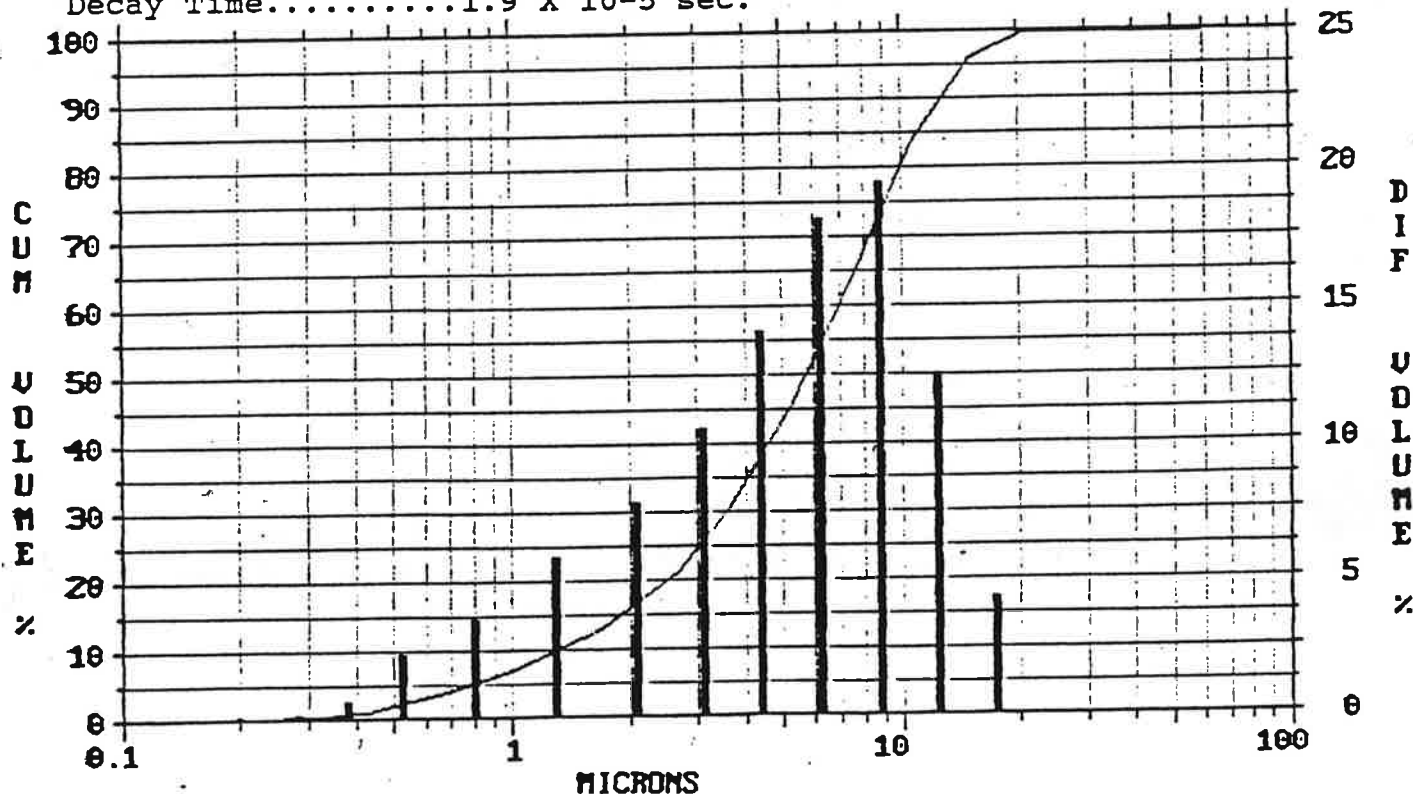
Fluorescence..... Pink
Wavelength at Main Peak....626 nm
Band Width.....124 nm
ICI Color Coordinates
..... x = 0.480
..... y = 0.386

TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)
10% 50% 90%

MicroTrac 1.35 5.82 12.94
Body Color.....White
Excitation Peak.....254 nm

Decay Time.....1.9 X 10⁻⁵ sec.



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

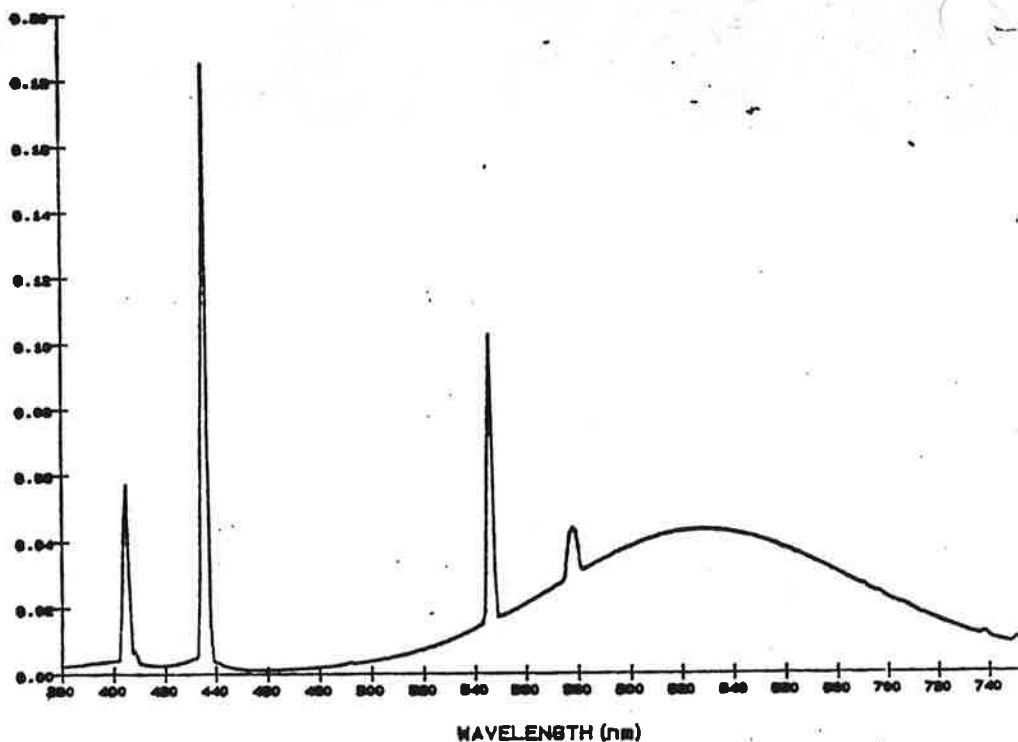
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing & Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.

Europe

GENERAL ELECTRIC
Components Marketing & Sales Oper.
21a High Street East, Uppingham
Leicestershire LE15 9PY, England
Telef: 0572-823748/9
Telex: 34362 (GELCOS)
Telefax: 0572-823836

GE Components
Marketing & Sales Operation





June 1, 1992

7750 - HH

TYPE: 111-3-082

Strontium Halophosphate:Sb:Mn

Material Symbol.....Sr(PO4)6,F:Sb,Mn

Application.....Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

Fluorescence..... Blue

Wavelength at Main Peak....509 nm

Band Width.....130 nm

ICI Color Coordinates

..... x = 0.254

..... y = 0.358

Decay Time.....1.7 X 10⁻⁵ sec.

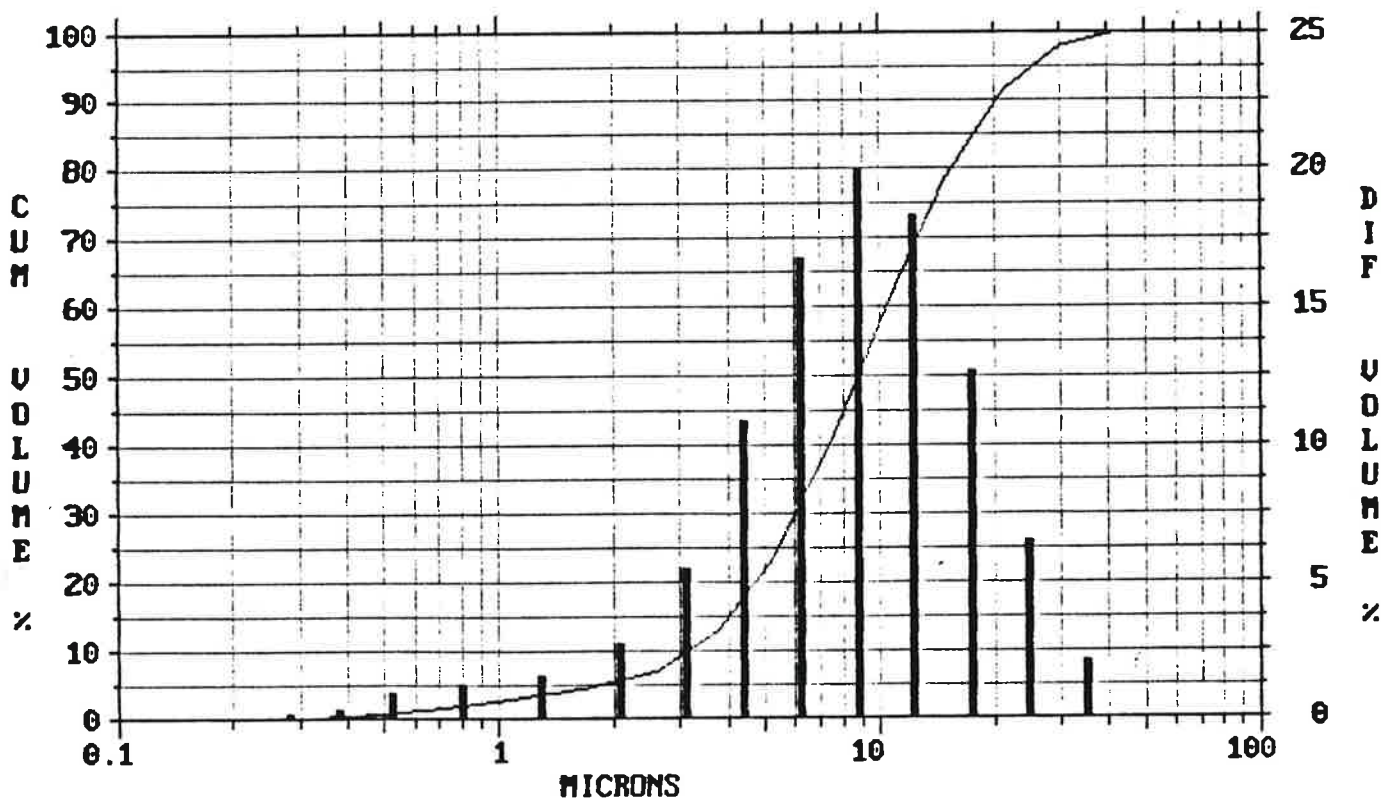
TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)

	10%	50%	90%
MicroTrac	3.20	8.95	20.46

Body Color.....White

Excitation Peak.....254 nm



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

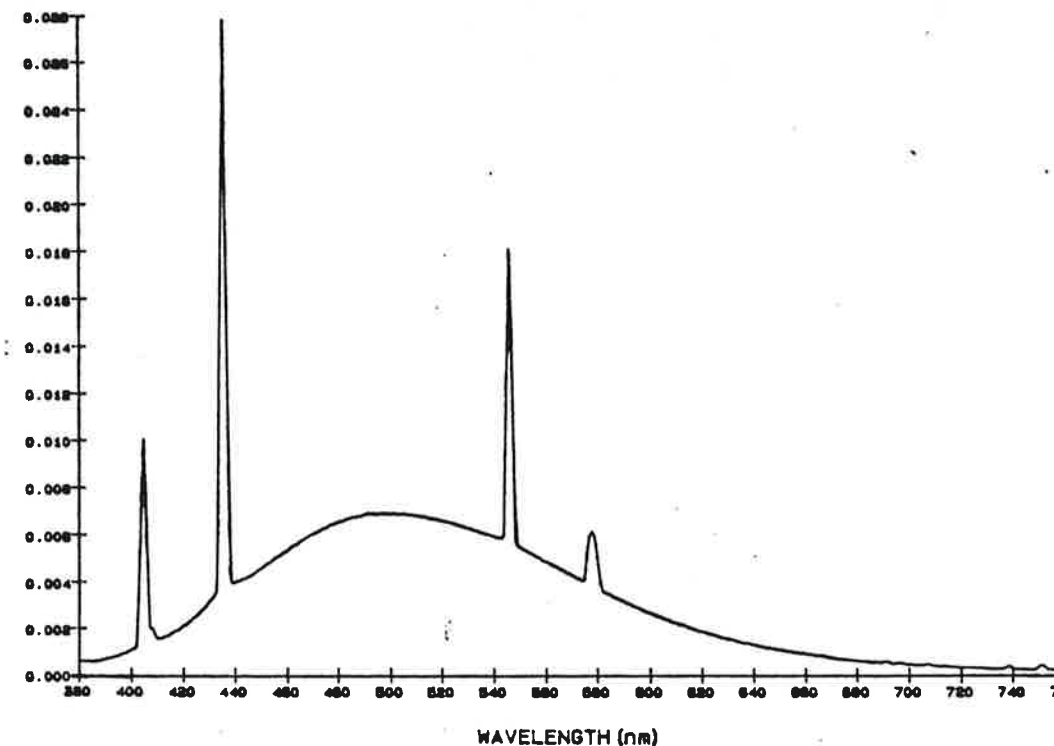
GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

15: 04 Page 1

EMISSION OF STRONTIUM BLUE



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox[®] ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750 - JJ

TYPE: 111-3-089

Strontium Halophosphate:Sb:Mn

Material Symbol.....Sr5,F(PO4)3:Sb:Mn

Application.....Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

Fluorescence..... Green

Wavelength at Main Peak....570 nm

Band Width.....135 nm

ICI Color Coordinates
 x = 0.333
 y = 0.412

Decay Time.....1.3 X 10⁻⁵ sec.

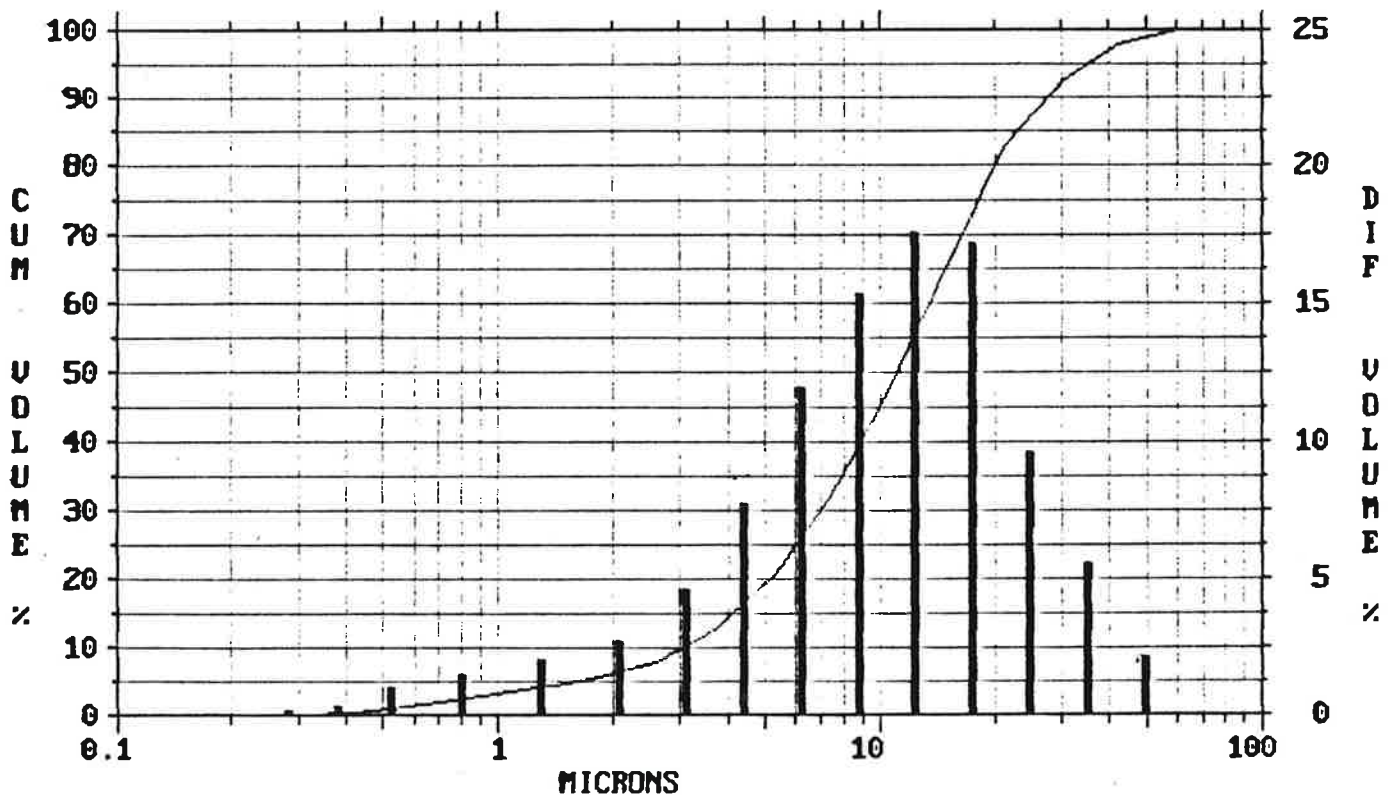
TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)

	10%	50%	90%
MicroTrac	3.12	11.11	27.81

Body Color.....White

Excitation Peak.....254 nm



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

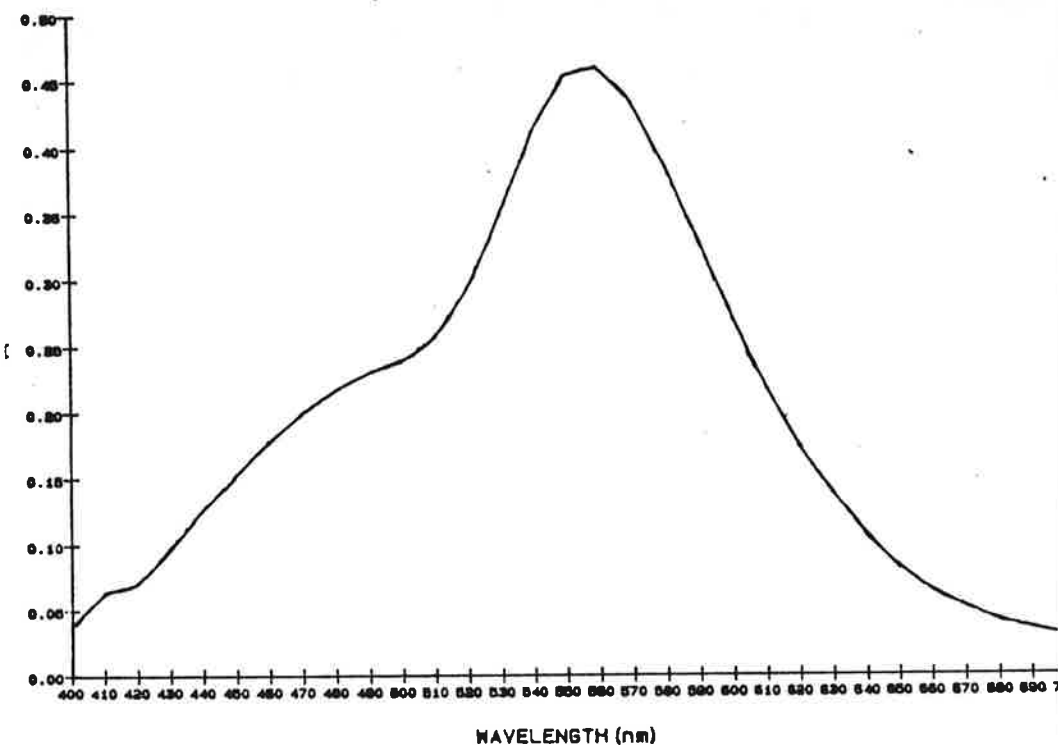
Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

EMISSION OF STRONTIUM GREEN



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750 - KK

TYPE: 111-3-238

Calcium Fluorophosphate (Apatite):Sb

Material Symbol.....Ca5F(PO4)3:Sb

Application.....Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

TYPICAL PHYSICAL PROPERTIES

Fluorescence..... Blue

Wavelength at Main Peak....482 nm

Band Width.....138 nm

ICI Color Coordinates

..... x = 0.221

..... y = 0.281

Decay Time.....10⁻⁴ to 10⁻⁵ sec.

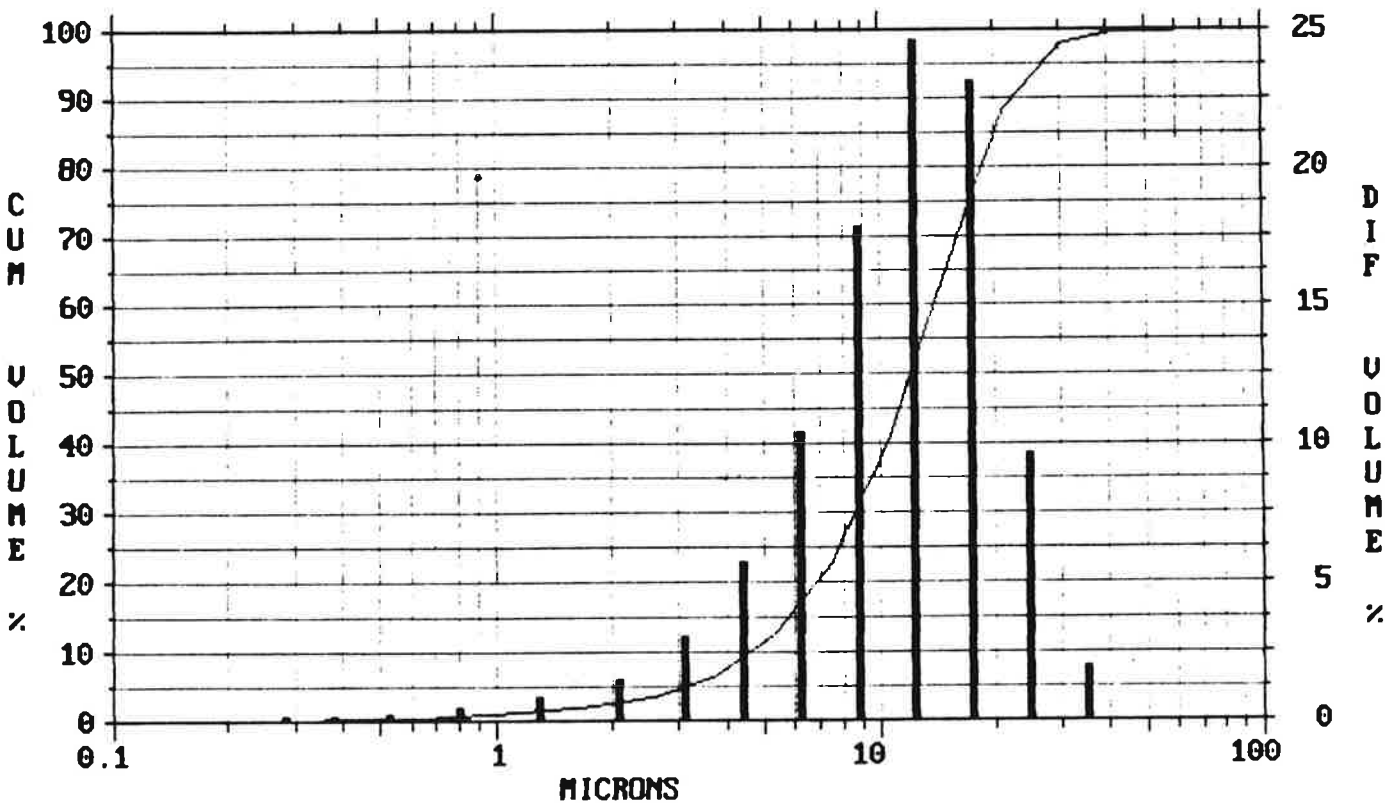
Particle Size Distribution
(size in micrometers)

	10%	50%	90%
MicroTrac	4.66	12.24	22.62

Body Color.....White

Excitation Peak.....254 nm

Material Density,g/cc...3.18



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

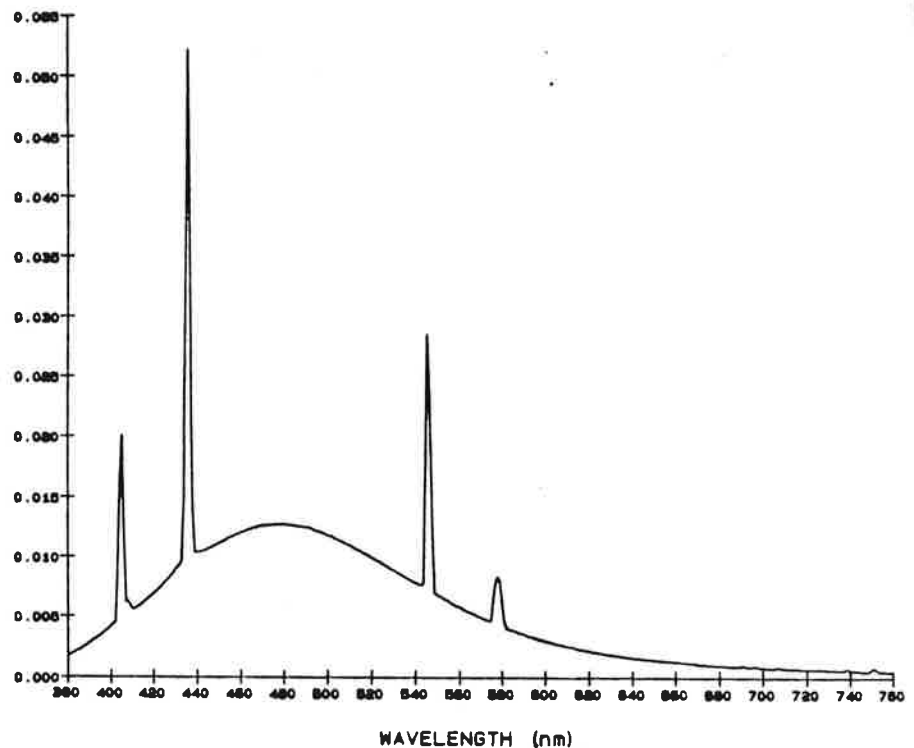
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox[®] ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750 - LL

TYPE: 111-3-178

Calcium Fluorophosphate (Apatite)Sb:Mn

Material Symbol.....Ca₅F(PO₄)₃Sb:Mn

Application.....Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

Fluorescence.....Yellow

Wavelength at Main Peak....572 nm

Band Width.....74 nm

ICI Color Coordinates
 x = 0.410
 y = 0.426

Decay Time.....10⁻⁴ to 10⁻⁶ sec.

TYPICAL PHYSICAL PROPERTIES

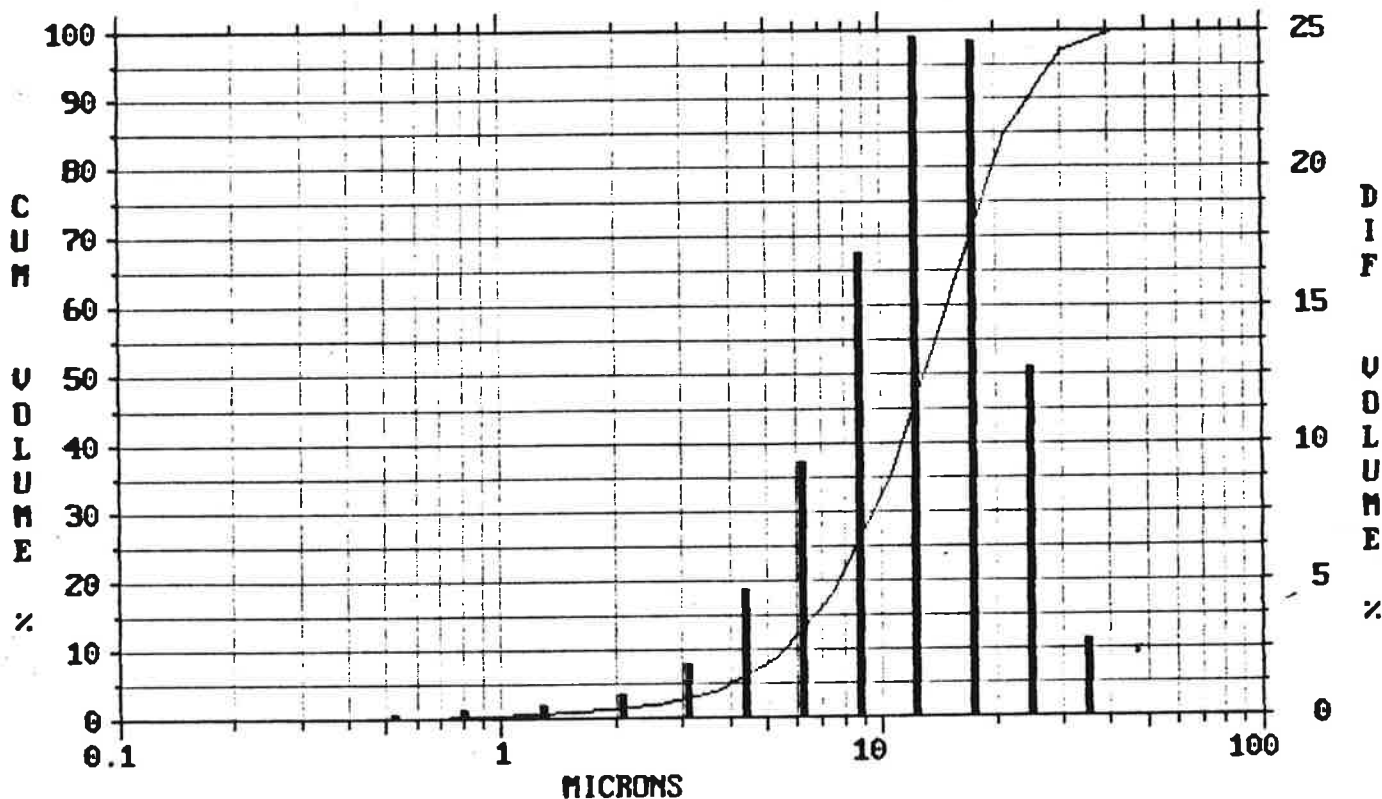
Particle Size Distribution
(size in micrometers)

	10%	50%	90%
MicroTrac	5.59	13.20	24.92

Body Color.....White

Excitation Peak.....254 nm

Material Density,g/cc....3.1



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

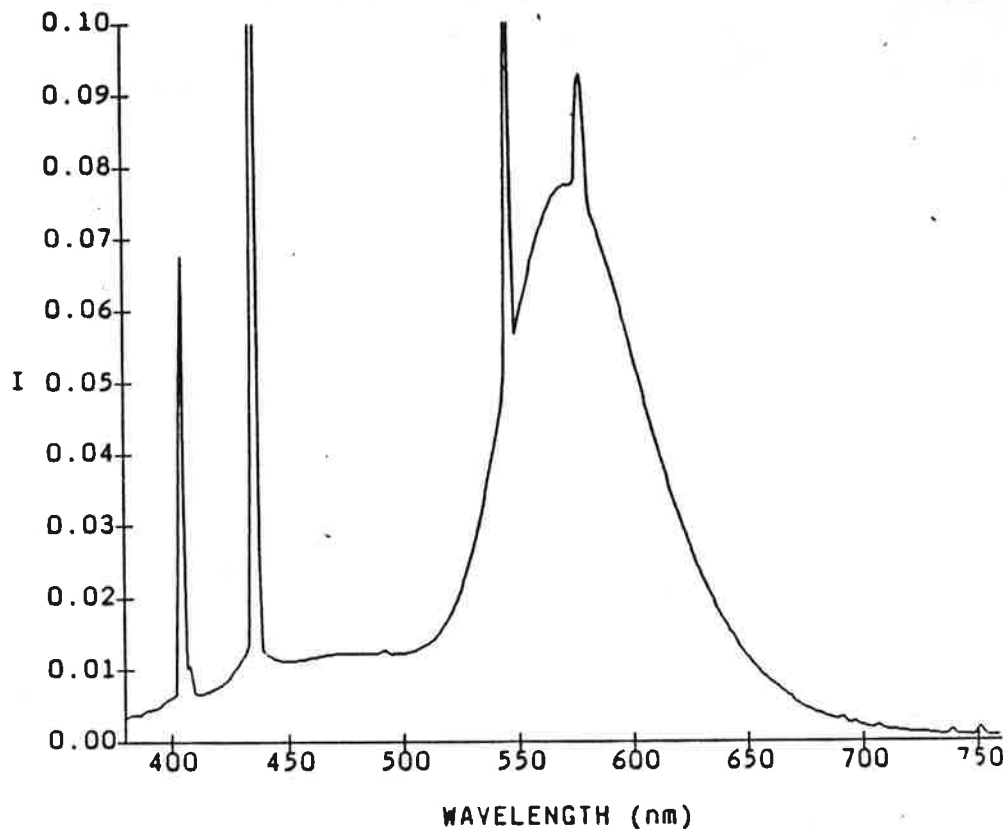
Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

CALCIUM YELLOW DISTRIBUTION



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-MM

TYPE: 111-3-249

Strontium Chlorophosphate (Apatite):Europium

Material Symbol..... Sr5(PO4)3Cl:Eu

Application..... Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

Fluorescence..... Blue

Wavelength at Main Peak. 452.1 nm

Line/Band Width.....32 nm

ICI Color Coordinates

..... x = 0.151

..... y = 0.064

Decay Time.....10⁻³ to 10⁻⁴ sec.

TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)

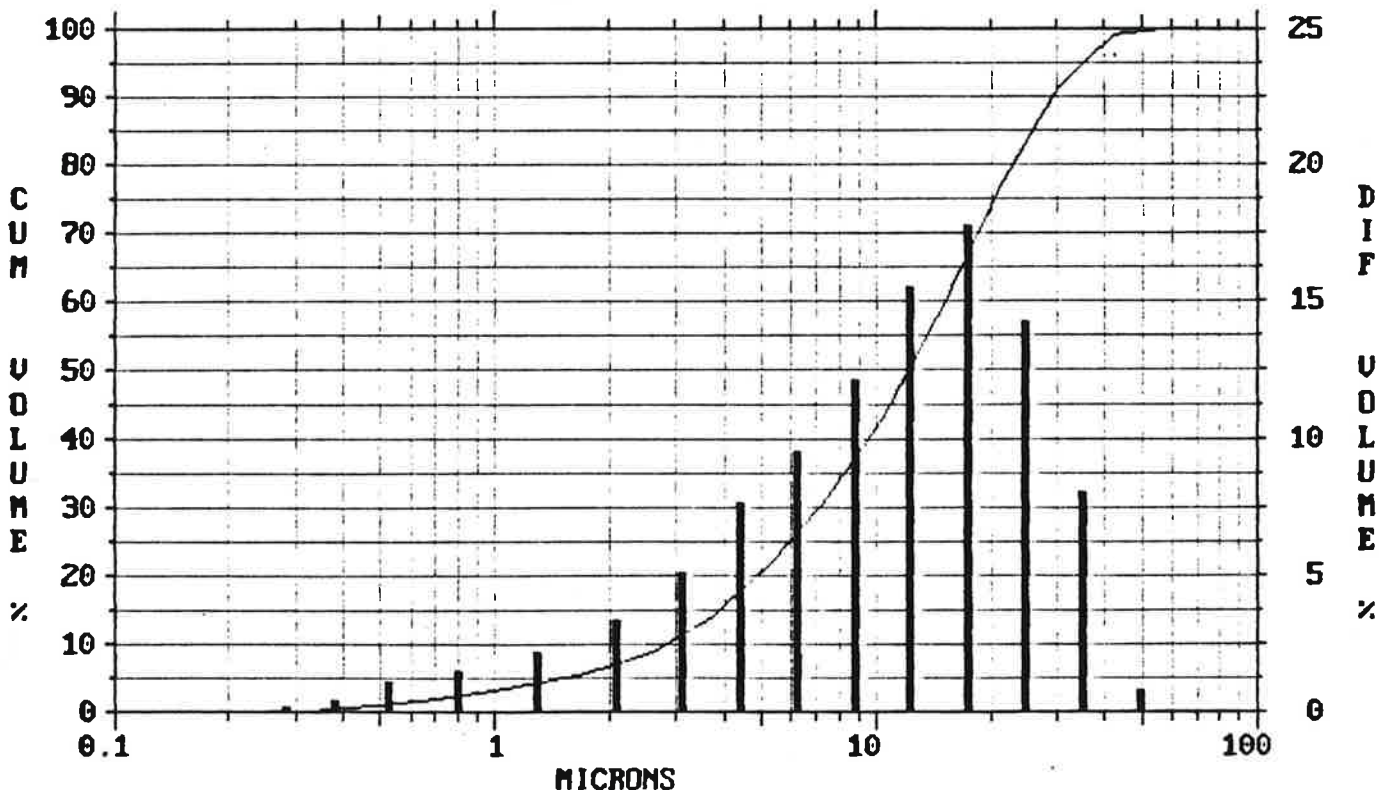
10% 50% 90%

MicroTrac 2.88 12.38 29.18

Absolute Density, g/cc...7.1

Body Color..... White

Excitation Peak.....254 nm



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

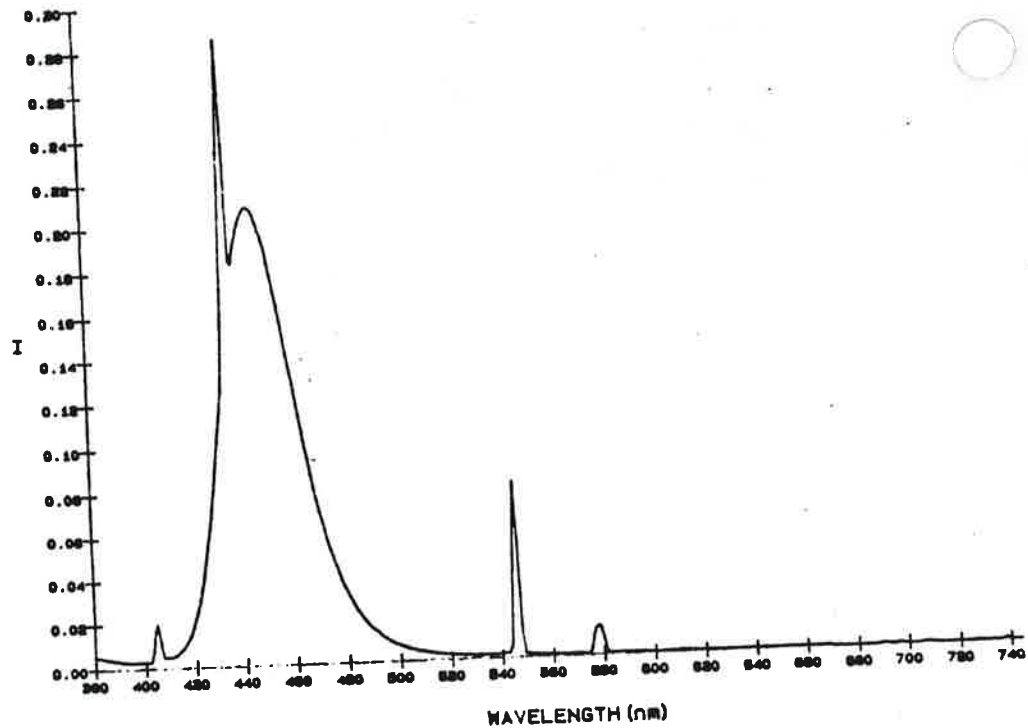
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-NN

TYPE: 111-3-238 DAYLIGHT

Blend of Type 3-262 and Type 3-228

Material Symbol.....(CaMn)10(FCl)2(PO4)6:Sb

Application.....Fluorescent Lamps

TYPICAL OPTICAL PROPERTIES

Fluorescence.....Blue-White

Wavelength at Peak.....482/578 nm

Line/Band Width.....N/A

ICI Color Coordinates

40T12 lamp..... x = 0.313

..... y = 0.337

Decay Time.....10⁻³ to 10⁻⁴ sec.

TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)

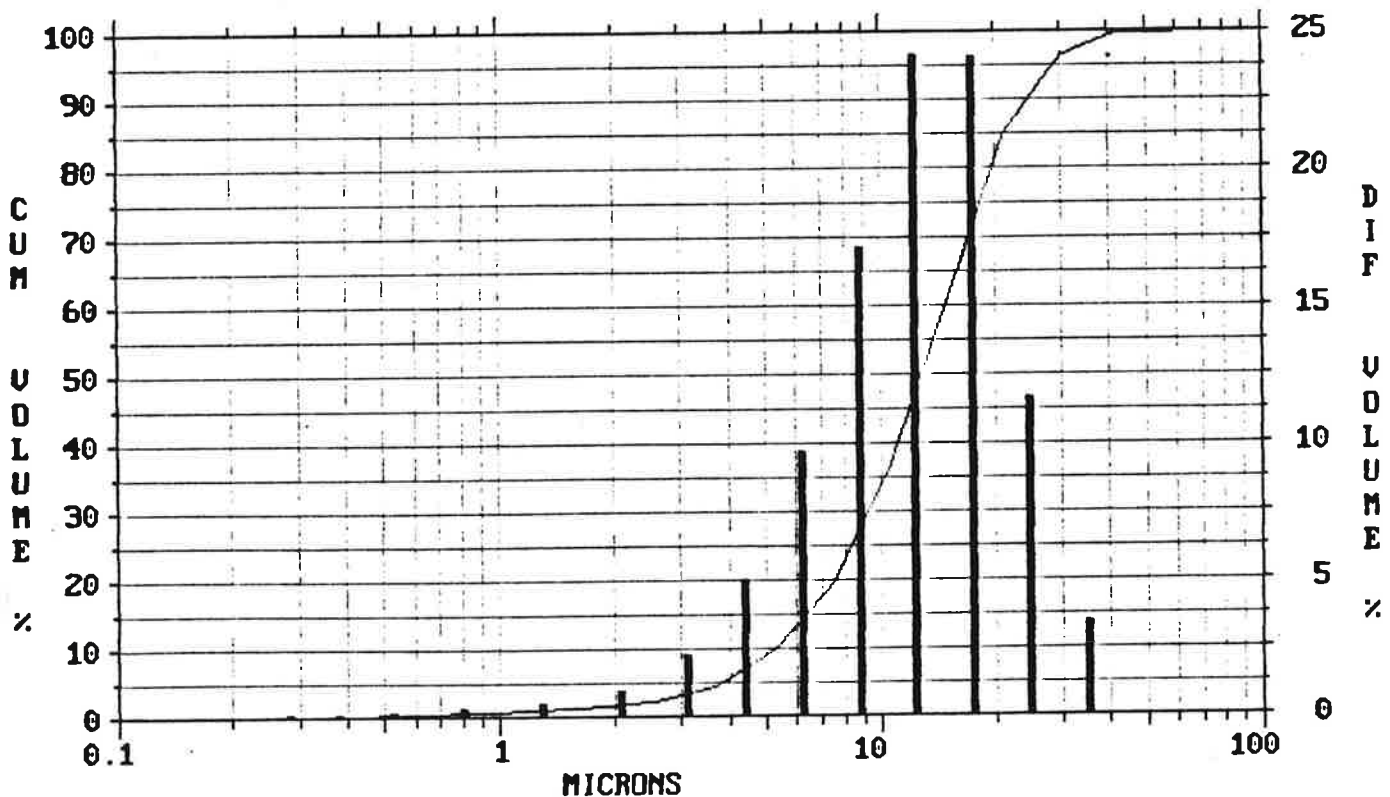
10% 50% 90%

MicroTrac 5.35 12.99 24.97

Absolute Density, g/cc...4.12

Body Color.....White

Excitation Peak.....254 nm



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

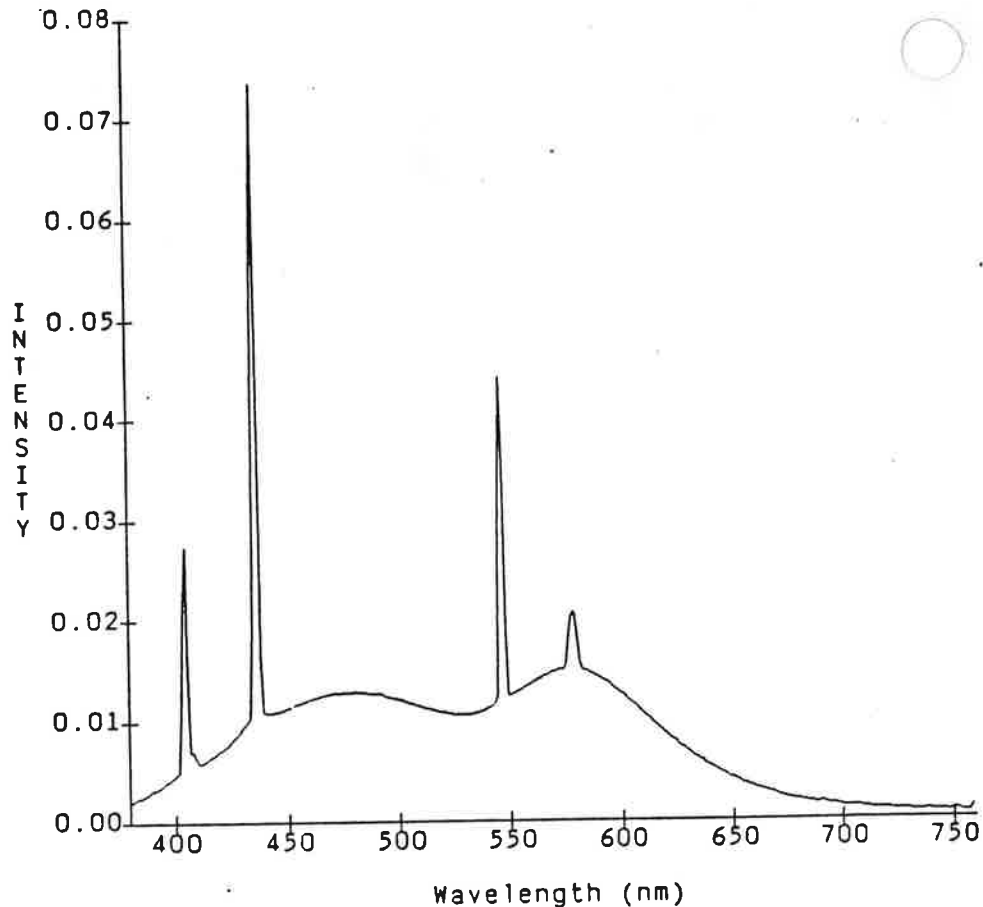
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-PP

TYPE: 111-3-236

Yttrium Oxide activated with Europium

Material Symbol.....Y2O3:Eu

Application.....Red Triphosphor Component

TYPICAL OPTICAL PROPERTIES

Fluorescence.....Red

Wavelength at Main Peak... 611 nm

Line Width.....0.6 nm

ICI Color Coordinates

.....x = 0.643

.....y = 0.347

Decay Time.....10⁻³ to 10⁻⁴ sec.

TYPICAL PHYSICAL PROPERTIES

Particle Size Distribution
(size in micrometers)

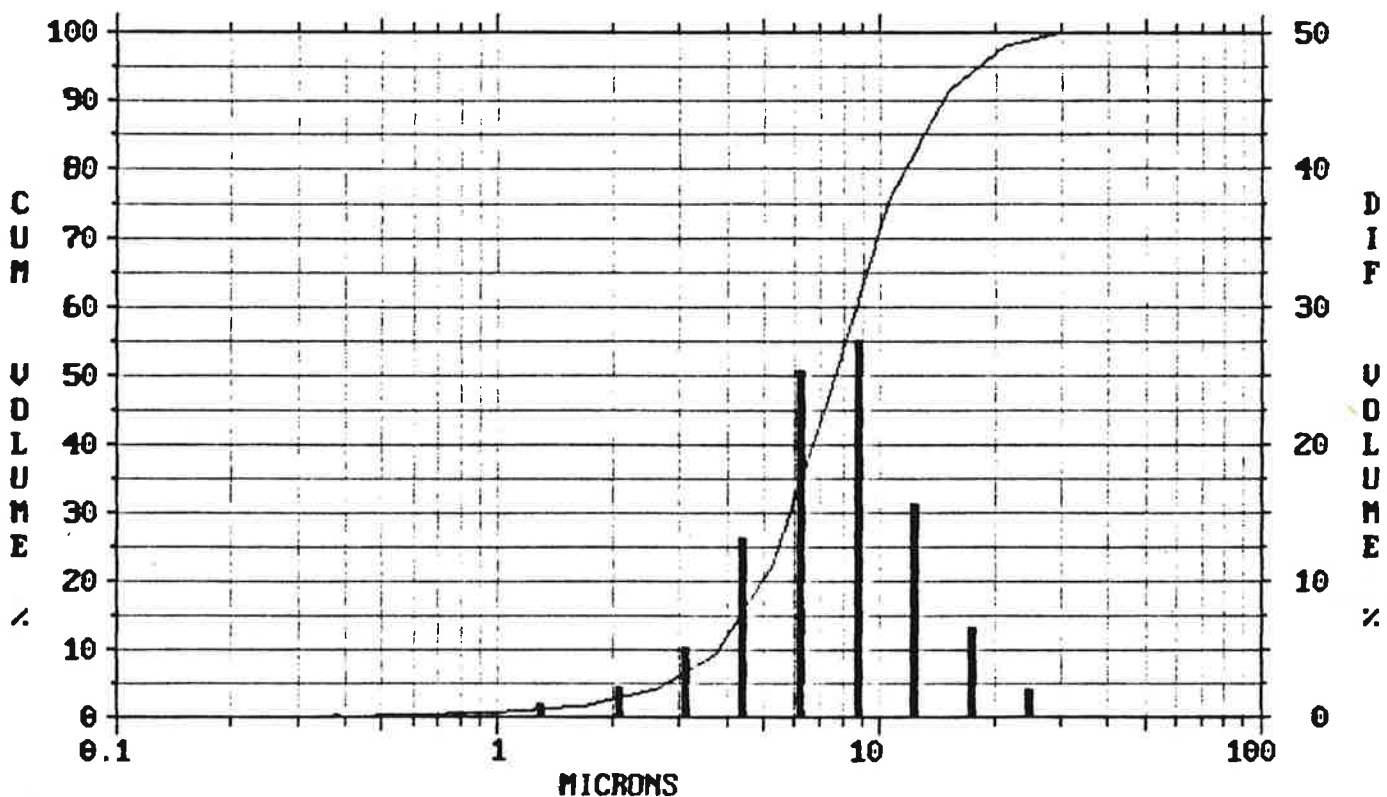
10% 50% 90%

MicroTrac 3.81 7.69 14.59

Absolute Density, g/cc...5.3

Body Color.....White

Excitation Peak.....254 nm



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

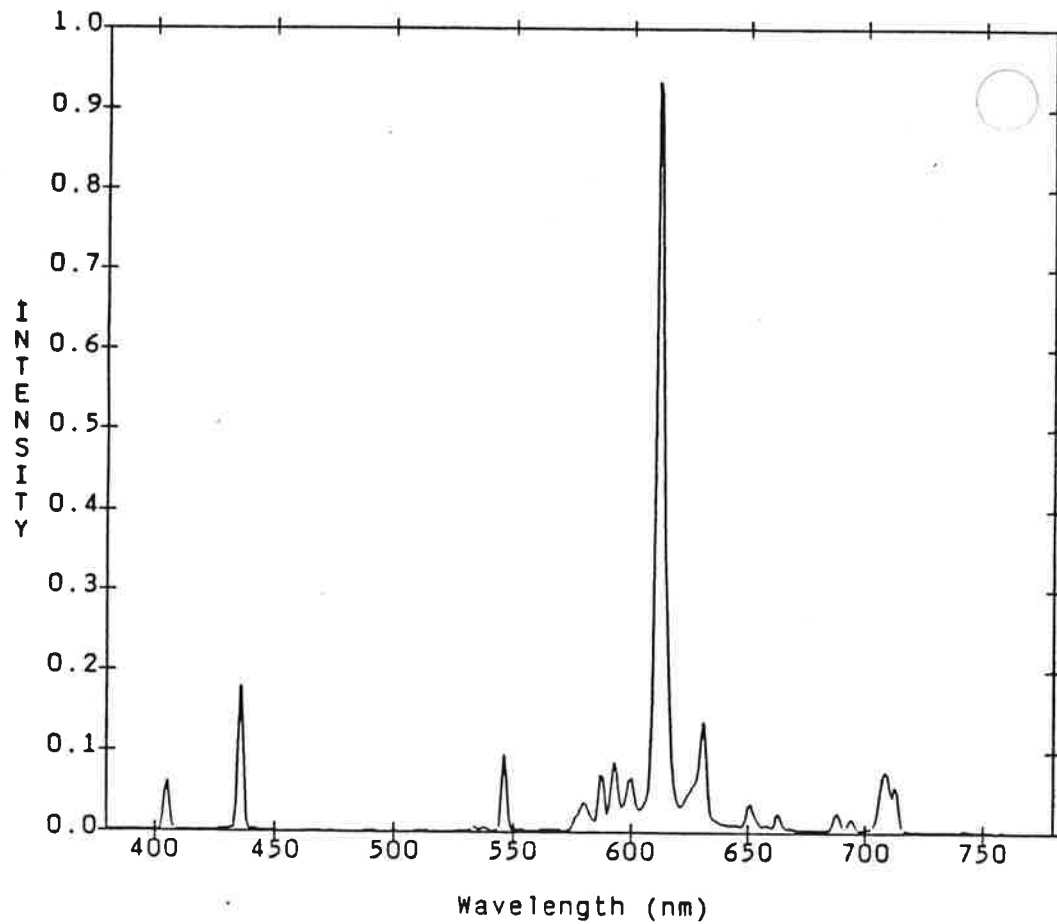
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox[®] ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation



June 1, 1992

7750-QQ

TYPE: 111-3-159

Strontium Pyrophosphate activated with Europium

Material Symbol.....Sr₂P₂O₇:Eu

Application.....Photocopy and UV Emitting Lamps

TYPICAL OPTICAL PROPERTIES

TYPICAL PHYSICAL PROPERTIES

Fluorescence.....Blue

Particle Size Distribution
(size in micrometers)

Wavelength at Main Peak....420 nm

10% 50% 90%

Band Width.....35 nm

MicroTrac 3.71 11.63 31.92

ICI Color Coordinates

Excitation Peak.....258 nm

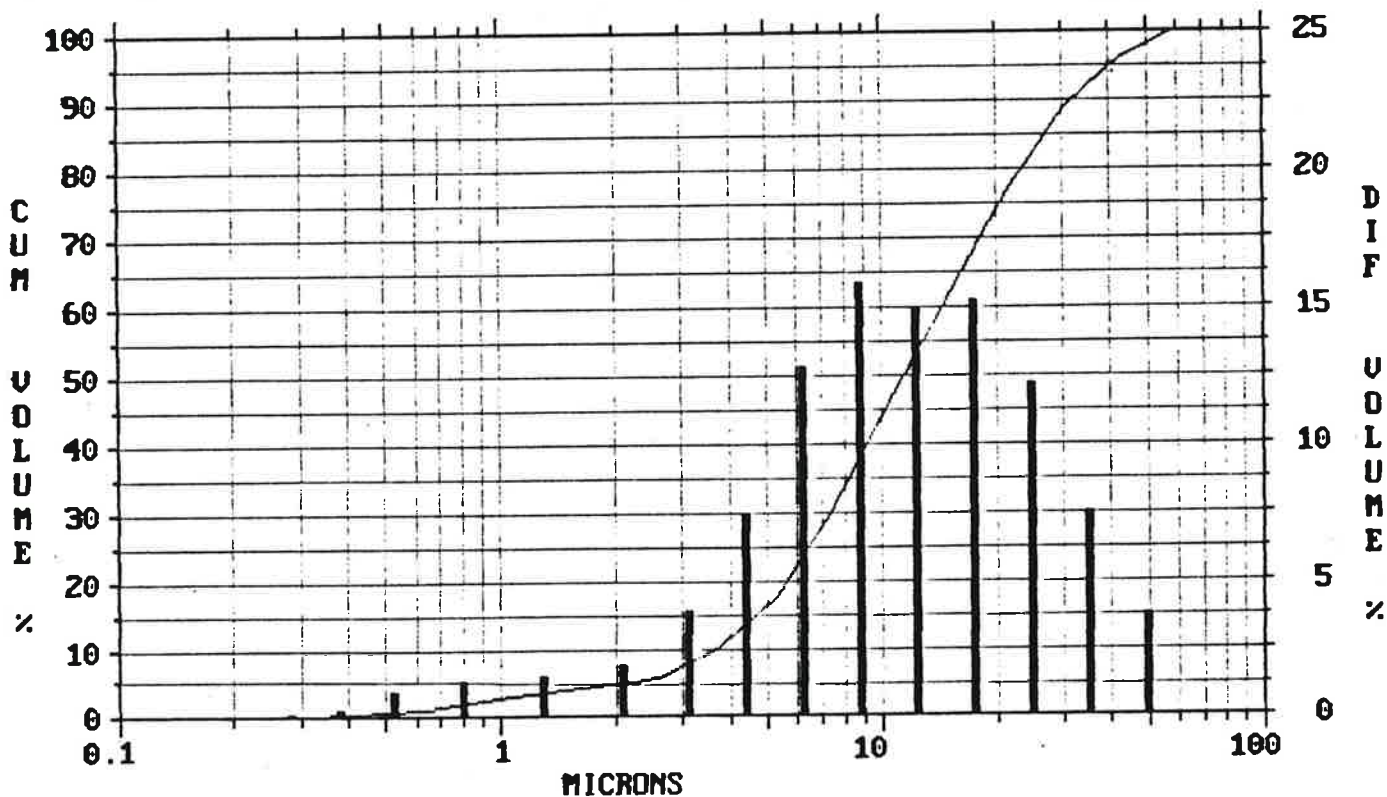
..... x = 0.170

Body Color.....White

..... y = 0.015

Decay Time.....4.2 X 10⁻⁷ sec.

Material Density,g/cc.....3.8



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

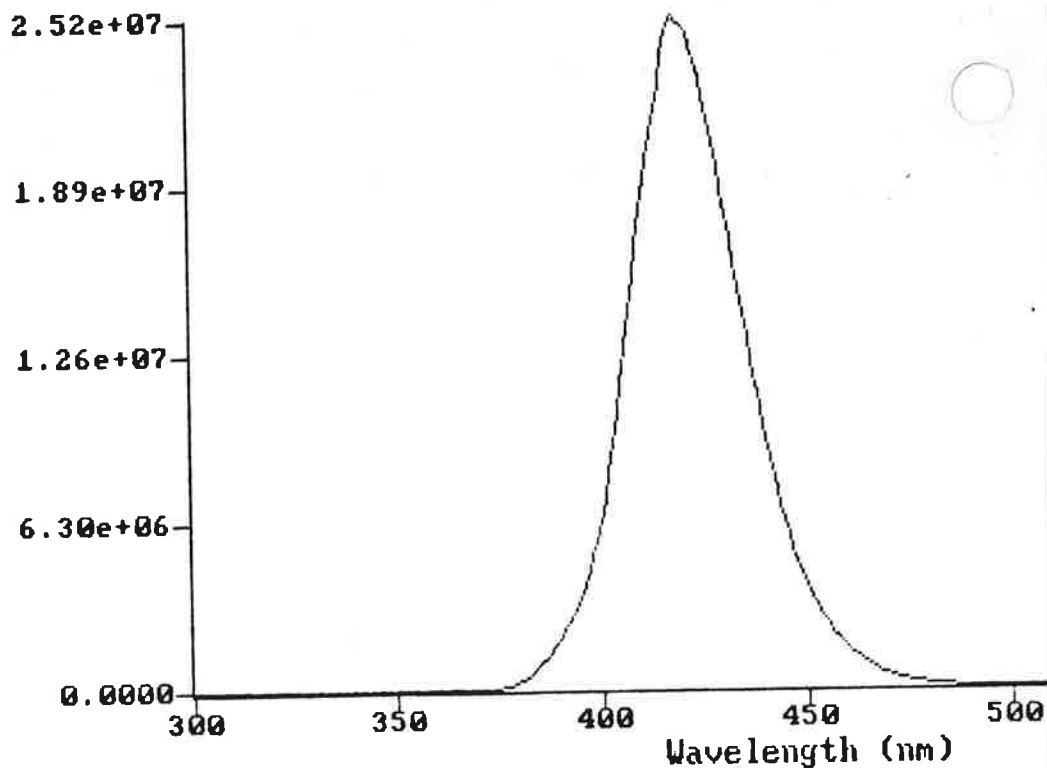
To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372



GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox[®] ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



GE Components
Marketing & Sales Operation

June 1, 1992

7750-SS

LAMP PHOSPHOR ORGANIC SUSPENSION PREPARATION

The purpose of the mixing operation is to dissolve the powdered phosphors in a suspension and produce a smooth coating, one that will provide complete coverage of the inside of the fluorescent tubes.

Phosphor suspensions can be either organic or water based. In the case of organic suspensions an ethylcellulose binder containing butyl acetate, naphtha and cellosolve solvent are used. The binder compound ready for use is our 112-28-10.

PREPARATION

A 100-gallon ball mill is loaded with 90 kilograms of RPS halophosphor. The 135 liters of ethylcellulose binder is then added to the ball mill. The RPS phosphors do not require milling, only dispersion in the binder. Milling the phosphors will reduce lumens and shift the color.

MILLING

The ball mill is operated for a fixed period of time. This must be determined empirically, as it will depend on the mill speed, mill stones and viscosity of the mixture. The objective is to disperse the phosphor in the binder to produce a smooth coating in the bulb without milling. The suspension mixture is emptied from the ball mill and screened through a 100-mesh screen to remove any non-dispersed material.

ADJUSTMENT OF VISCOSITY

After milling the suspension must be diluted to the proper viscosity to obtain the desired phosphor gram weight per bulb. Adjustments to the suspension are made with butyl acetate and naphtha which is our 112-29-3 thinner.

The optimum viscosity will vary somewhat depending upon the temperature, humidity, drying conditions, color, diameter, and length of the bulbs. Ordinarily, this requires a dilution to about double the original volume of the mill load.

Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.

Europe

GENERAL ELECTRIC
Components Marketing & Sales Oper.
21a High Street East, Uppingham
Leicestershire LE15 9PY, England
Telef: 0572-823748/9
Telex: 34362 (GELCOS)
Telefax: 0572-823836



***GE Components
Marketing & Sales Operation***

7750-SS
continued**ALTERNATE SUSPENSION SYSTEM**

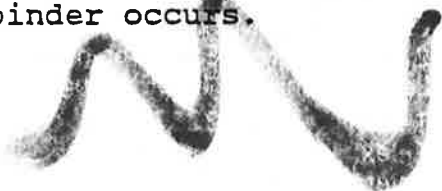
An alternate suspension media system is nitrocellulose lacquer. This lacquer system contains nitrocellulose as the binder and butyl acetate as the solvent. This system is recommended when the tri-band rare earth phosphors are being suspended. This system also uses the 112-29-3 thinner to reduce the viscosity to obtain the desired coating weight of the phosphor in the bulb. This nitrocellulose system ready for use can be ordered as our 114-11-10 binder system. All other steps in this procedure for use of ethylcellulose binder can be applied when using the nitrocellulose binder system.

STORAGE

The suspended phosphor should be stored at cool temperatures (15-20 C). Excessive or freezing temperatures will hasten binder deterioration. It is desirable that the suspension be kept either in a covered tank with stirrer, or rolled in a jar without pebbles. Normal shelf life for this material is two months. If the binder deteriorates, the phosphor can be salvaged by burning out the binder

LAMP BAKING (LEHRING)

In most uses of fluorescent powder films, the phosphor layer is irradiated with ultraviolet light to produce visible light, additionally this irradiation is usually generated by a low-pressure mercury vapor arc within a closed discharge tube. In this case, it is necessary to remove the binder (either system) by lehring or burning the binder from the dry powder film. Lehring is easily accomplished by heating the dried film to 550 to 600 C with air present to support the combustion of the binder. Be sure to have adequate air present so complete combustion of the binder occurs.



Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



Europe

GENERAL ELECTRIC
Components Marketing & Sales Oper.
11a High Street East, Uxbridge
Buckinghamshire UB8 3PH, England
Telef: 0572-823748/9
Telex: 34362 (GELCOS)
Telefax: 0572-823836

GE Components
Marketing & Sales Operation



June 1, 1992

7750-SS

LAMP PHOSPHOR ORGANIC SUSPENSION PREPARATION

The purpose of the mixing operation is to dissolve the powdered phosphors in a suspension and produce a smooth coating, one that will provide complete coverage of the inside of the fluorescent tubes.

Phosphor suspensions can be either organic or water based. In the case of organic suspensions an ethylcellulose binder containing butyl acetate, naphtha and cellosolve solvent are used. The binder compound ready for use is our 112-28-10.

PREPARATION

A 100-gallon ball mill is loaded with 90 kilograms of RPS halophosphor. The 135 liters of ethylcellulose binder is then added to the ball mill. The RPS phosphors do not require milling, only dispersion in the binder. Milling the phosphors will reduce lumens and shift the color.

MILLING

The ball mill is operated for a fixed period of time. This must be determined empirically, as it will depend on the mill speed, mill stones and viscosity of the mixture. The objective is to disperse the phosphor in the binder to produce a smooth coating in the bulb without milling. The suspension mixture is emptied from the ball mill and screened through a 100-mesh screen to remove any non-dispersed material.

ADJUSTMENT OF VISCOSITY

After milling the suspension must be diluted to the proper viscosity to obtain the desired phosphor gram weight per bulb. Adjustments to the suspension are made with butyl acetate and naphtha which is our 112-29-3 thinner. The optimum viscosity will vary somewhat depending upon the temperature, humidity, drying conditions, color, diameter, and length of the bulbs. Ordinarily, this requires a dilution to about double the original volume of the mill load.

ALTERNATE SUSPENSION SYSTEM

An alternate suspension media system is nitrocellulose lacquer. This lacquer system contains nitrocellulose as the binder and butyl acetate as the solvent. This system is recommended when the tri-band rare earth phosphors are being suspended. This system also uses the 112-29-3 thinner to reduce the viscosity to obtain the desired coating weight of the phosphor in the bulb. This nitrocellulose system ready for use can be ordered as our 114-11-10 binder system. All other steps in this procedure for use of ethylcellulose binder can be applied when using the nitrocellulose binder system.

(CONTINUED ON REVERSE SIDE)

STORAGE

The suspended phosphor should be stored at cool temperatures (15-20 C). Excessive or freezing temperatures will hasten binder deterioration. It is desirable that the suspension be kept either in a covered tank with stirrer, or rolled in a jar without pebbles. Normal shelf life for this material is two months. If the binder deteriorates, the phosphor can be salvaged by burning out the binder

LAMP BAKING (LEHRING)

In most uses of fluorescent powder films, the phosphor layer is irradiated with ultraviolet light to produce visible light, additionally this irradiation is usually generated by a low-pressure mercury vapor arc within a closed discharge tube. In this case, it is necessary to remove the binder (either system) by lehring or burning the binder from the dry powder film. Lehring is easily accomplished by heating the dried film to 550 to 600 C with air present to support the combustion of the binder. Be sure to have adequate air present so complete combustion of the binder occurs.

Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox[®] ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.

GE Components
Marketing & Sales Operation





June 1, 1992

7750-TT

NITRO BINDER SYSTEMS

1. TRI-PHOSPHORS, BLACKLIGHT, SKINTAN

=====		----NITRO RESIN	2.10 KGS	1.82%	NX2C
44% - PHOSPHOR	90.00 KGS				
56% - BINDER---->	115.60 KGS	----DENATURED ALCOHOL	15.60 KGS	13.49%	AA1C
(114-11-10)	-----				
TOTAL	205.60 KGS	----N-BUTYL ACETATE	97.90 KGS	84.69%	BU2A

			115.60 KGS		

2. HALOPHOSPHORS, 913, 96 TYPE SUSPENSIONS

=====		----ETHYL CELLULOSE	3.10 KGS	4.10%	ETBD
54% - PHOSPHOR	90.00 KGS				
ALON	0.45 KGS				
46% - BINDER---->	75.60 KGS	----CELLOSOLVE SOLVENT	6.70 KGS	8.86%	CX9A
(112-28-10)	-----				
TOTAL	166.05 KGS	----NAPHTHA	23.40 KGS	30.95%	PD1A
		----N-BUTYL ACETATE	42.40 KGS	56.08%	BU2A

			75.60 KGS		

3. PLANTLIGHT

=====		----ETHYL CELLULOSE	0.30 KGS	0.40%	ETBD
54% - PHOSPHOR	15.00 KGS				
27% - BINDER---->	7.60 KGS	----CELLOSOLVE SOLVENT	0.70 KGS	0.93%	CX9A
(112-28-10)	-----				
19% - BINDER---->	5.10 KGS	----NAPHTHA	2.40 KGS	3.17%	PD1A
(114-11-10)	-----				
TOTAL	27.70 KGS	----N-BUTYL ACETATE	4.20 KGS	5.56%	BU2A
		----NITRO RESIN	0.10 KGS	0.09%	NX2C
		----DENATURED ALCOHOL	0.70 KGS	0.61%	AA1C
		----N-BUTYL ACETATE	4.30 KGS	3.72%	BU2A

			12.70 KGS		

Packaging

Standard packaging is in 100 kilogram (28 gallon) fiber drums with a separate waterproof plastic liner. Fifty kilogram drums or other special packaging can be arranged on request.

Material Safety Data

A material safety data sheet for this chemical is available upon request.

Availability

Normal lead time for shipment is 8 weeks.

Ordering

To order this and other fluorescent lamp phosphors, contact your local GE sales representative or:

Domestic

GE Chemical Products Plant
1099 Ivanhoe Road
Cleveland, OH 44110
Phone: (216) 266-4611
FAX: (216) 266-4257

International

GE Components Marketing
& Sales Operation
21800 Tungsten Road
Cleveland, OH 44117
U.S.A.
Telex: 985569
(GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

GE Components Marketing & Sales Operation

In addition to lamp phosphors, GE Components Marketing & Sales Operation is the source for tungsten and molybdenum wire, glass, Lucalox® ceramic, chemicals, Dumet & Cumet wire, EDM wire, leads, lamp

bases and other components used by the lamp, electronic, cemented carbide and other industries.

Technical and engineering assistance is available on all products.



***GE Components
Marketing & Sales Operation***