

GAFFER COLOURED GLASS LIMITED

Updated 15th December 2016

Gaffer® Colors Constituents

We hereby declare that our coloured glass is made of the following constituents:

Colour No.

000/010/011/012/013/014/015/016/018/019/020/021/022/023/024/025/026/030/031/032/033/035/036/037/
039/040/045/050/051/052/054/055/056/059/055/060/061/062/063/064/065/066/067/068/090/100/150/151/
152/153/154/155/156/157/158/159/198/199

Constituents:

Silica dioxide
Lead oxide 20% minimum
Potassium oxide
Sodium oxide
Boron oxide
Arsenic and/or Antimony trioxide
Colorants

Colour No.

034/070/071/072/073/074/076/077

Constituents:

Silica dioxide
Zinc oxide
Potassium oxide
Sodium oxide
Barium oxide
Calcium oxide
Boron oxide
Cadmium sulphide (CdSxSe)

Colour No.

075

Constituents:

Silica dioxide
Zinc oxide
Potassium oxide
Sodium oxide
Calcium oxide
Boron oxide
Colorants

Colour No.

038

Constituents:

Silica oxide
Sodium oxide
Potassium oxide
Calcium oxide
Boron oxide
Alumina oxide
Lithium oxide
Antimony trioxide
Uranium oxide

Color No.

049

Constituents:

Silica oxide
Sodium oxide
Calcium oxide
Alumina oxide
Boron oxide
Potassium oxide
Iron sulphide

Colour No.

080

Constituents:

Silica oxide
Sodium oxide
Barium oxide
Calcium oxide
Alumina oxide
Colorants

Colour No.

101/102/103/104/105/106/107/108/111/120/121/122/123/124/125/126/127/128/129/130/131/132/133/134/
135/136/137/138/139/140/141/142/169/170/171/172/173/174/175/176/177/178/179/180/181/182/183/184/
/185/186/187/188/189/192/193/194/196

Constituents:

Silica oxide
Sodium oxide
Potassium oxide
Zinc oxide
Barium oxide

Calcium fluoride
Sodium fluoride
Boron oxide
Alumina oxide

Colour No.

160/161/162/163/164/165/166/167/168/190/192/193

Constituents:

Silica oxide
Potassium oxide
Sodium oxide
Boron oxide
Calcium oxide
Barium oxide/lead oxide (either)
Calcium fluoride
Phosphorus oxide
Colorants

Colour No.

053

Constituents:

Silica oxide
Sodium oxide
Lithium oxide
Calcium oxide
Barium oxide
Boron oxide
Alumina oxide
Colorants

Color No.

110/112/113/114/115/116

Constituents:

Silica oxide
Sodium oxide
Potassium oxide
Lead oxide 10% min
Barium oxide
Calcium fluoride
Sodium fluoride
Boron oxide
Alumina oxide
Colorants

Colour No. Casting crystal

210/214/215/217/218/219/220/221/225/230/235/240/241/242/245/250/251/252/253/254/255/256/257/
258/259/260/261/262/263/265/266/267/268/269/270/272/275/276/278/279/280/282/285/290/300

Constituents:

Silica oxide
Sodium oxide
Potassium oxide
Lead oxide 42% min
Antimony /or Arsenic oxide
Colorants

Colour No. Casting crystal

338 Uranium green

Constituents:

Silica oxide
Sodium oxide
Potassium oxide
Lithium oxide
Magnesium oxide
Zinc oxide
Alumina oxide
Antimony oxide
Uranium oxide

Safety Instructions:

Processing the powders and granulates should happen under a suction system.
Molten products should be handled under a strong ventilation system.
Eating and smoking is not allowed during the process.

We certify that the above information is correct to the best of our knowledge.

John Croucher / John Leggott
Directors. Gaffer Coloured Glass Ltd.

Additional information can be obtained from John Croucher or John Leggott at gafferglass@xtra.co.nz
2 Collins Street, Morningside, Auckland, New Zealand.
Ph: 64.9.846.9000 Fax: 64.9.846.9020

Material Safety Data Sheet

SECTION I

Manufacturers Name: Gaffer Coloured Glass Ltd.
Address: 2 Collins Street, Morningside, Auckland, New Zealand.
Emergency Ph: 64.9.846.9000
Ph: 64.9.846.9000
Fx: 64.9.846.9020
Email: gafferglass@xtra.co.nz

Suppliers name: Gaffer Glass USA Ltd
Address: 19622 70th Ave South Kent, WA 98032
Information Ph: 253.395.3361
253.395.3362
Fx: 253.395.3363
Emergency Contact: Hallynd Hayes
Email: manager@gafferglassusa.com

Date Prepared: May 2012
Common name: Color glass rods, billets and frits
Chemical formula: Glass matrix varies with composition and color.

SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

Chemical name – Common name	Maximum %	OSHA PEL	ACGIH TLV*
Alumina oxide	4.0	10mg/m ³	10mg/m ³
Antimony trioxide	0.35	0.5 mg/m ³	0.5 mg/m ³ * A-2
Arsenic trioxide	5.0	0.01mg/m ³	0.01mg/m ³ * A-1
Barium oxide	4.0	0.5 mg/m ³	0.5 mg/m ³
Boron oxide	3.0	15 mg/m ³	10 mg/m ³
Cadmium sulphide	0.7	0.005 mg/m ³	0.002 mg/m ³ * A-2
Calcium oxide	4.0	2.0 mg/m ³	2.0 mg/m ³

Calcium fluoride	1.0	2.5 mg(F)/m3	2.5 mg(F)/m3
Chrome oxide	5.0	0.5 mg/m3	0.5 mg/m3
Cobalt oxide	1.5	0.05 mg/m3	0.02 mg/m3* A-3
Cupric oxide	4.5	1.0 mg/m3	1.0 mg/m3
Iron oxide	4.0	5.0 mg/m3	5.0 mg/m3
Lead oxide	50.0	0.05 mg/m3	0.05 mg/m3
Manganese Dioxide	4.0	5.0 mg/m3	0.2 mg/m3
Nickel oxide	1.0	1.0 mg/m3	1.0 mg/m3* A-2
Potassium oxide	12.0	-	-
Selenium	0.3	0.2 mg/m3	0.2 mg/m3
Silica dioxide (as cristobolite)	71.0	0.05 mg/m3	0.05/mg/m3
Sodium fluoride	5.0	2.5 mg(F)/m3	2.5 mg(F)/m3
Sodium oxide	17.0	-	-
Uranium oxide	1.75	0.2 mg(U)/m3	0.6 mg(U)/m3
Zinc oxide	8.0	5.0 mg/m3	5.0 mg/m3

All metal oxides are bound as oxides in a silicate matrix and will not be released unless ground to a fine powder or fume from molten glass.

*A-1 = A confirmed human carcinogen.

*A-2 = A suspected human carcinogen.

*A-3 = A confirmed animal carcinogen with unknown relevance to humans.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point:	1650-2550°F	Specific gravity:	2.5-3.6g/cm
Vapour pressure (mm hg)	-	Melting point:	1380-1650°F
Vapour density: (Air = 1)	-	Evaporation rate:	N/A
Solubility in water:	Not soluble		
Appearance and Color:	Solid rods/ billets/granules/powder color varies - no odour.		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash point:	N/A	LEL:	N/A
Extinguishing Media:	Water, Foam, CO2	UEL:	N/A
Special fire Fighting Procedures:	None		

Unusual Fire and Explosion Hazards: None

SECTION V - REACTIVITY DATA

Stability: Stable
Conditions to avoid: Breathing powders and fume when molten.
Incompatibility: None
Hazardous Decomposition Byproducts: Metal oxide fume (As, Sb, Ba, Cd, Pb, Se, Fe, Co, F) when molten
Hazardous Polymerization: Will not occur.

SECTION VI - HEALTH HAZARD DATA

For cuts from handling bulk products apply first aid as needed. Seek medical attention as required.
For burns from molted product - seek medical attention as needed depending on the severity of the burns.
Avoid inhalation of dust and fumes from molten material.

Alumina oxide:

Routes of entry: Inhalation, Ingestion
Chronic exposure to dust may cause lung damage

Antimony trioxide:

Routes of entry: Inhalation of fumes, Ingestion
Warning: This product contains a chemical known to the state of California to cause cancer. Suspected by ACGIH.
Ingestion causes irritation to the mouth, nose and stomach. Other symptoms include salivation, cough, metallic taste, nausea, vomiting, bloody, diarrhea, dizziness and muscular pains. Chronic exposure may damage the liver and the heart muscle.
Inhalation causes irritation to the respiratory tract. Symptoms can include sore throat, cough.
First aid. Remove victim from the source and seek medical attention from a physician immediately.

Arsenic trioxide:

Routes of entry: Inhalation of fumes, Ingestion.
This is considered to be a human carcinogen by ACGIH
Acute ingestion symptoms include constriction of throat, epigastric pain, vomiting and diarrhea. If severe exposure shock may develop due to fluid loss.
Chronic ingestion exposure symptoms include weight loss, nausea, loss of hair, diarrhea, peripheral neuritis.
Acute inhalation symptoms include cough, chest pain, dyspnea, headache, giddiness and general weakness.
Chronic inhalation includes weakness, loss of appetite, nausea, diarrhea, perforation of nasal septum, skin lesions, peripheral neuritis, motor paralysis.
First aid: remove victim from source and seek medical attention from Physician immediately.

Barium oxide:

Routes of entry: Inhalation and Ingestion.
Ingestion of barium increases muscle contractability, slowed heart rate, vascular constriction, bladder contraction, increased muscle tension.
Inhalation of dust may cause benign pneumoconiosis. Acute exposure may cause local eye, nose, throat and skin irritation.
First aid: Remove victim from source and seek medical attention immediately.

Boron oxide:

Routes of entry: Ingestion, inhalation of fumes.

When heated decomposition produces toxic fume. Can cause vomiting, diarrhea, shock.

First aid: Remove victim from source and seek medical attention from physician immediately.

Cadmium oxide/sulphide:

Routes of entry: Inhalation and Ingestion.

Cadmium is an OSHA/WISHA regulated cancer causing agent. Causes lung cancer and liver damage.

Acute inhalation symptoms include slight irritation of upper respiratory tract, followed by cough, sweating, chills. Severe exposure may involve pulmonary irritation, pain in chest, dyspnea, weakness. May develop emphysema.

Chronic exposure may cause lung damage increased risk of lung cancer and kidney damage.

First aid. Remove victim from source and seek medical attention from a physician immediately.

Calcium oxide:

Routes of exposure: Inhalation and Ingestion

Bronchitis and pneumonia have been reported from inhalation of dust

Cobalt oxide:

Routes of entry: Inhalation and Ingestion.

This is a confirmed animal carcinogen with unknown relevance to humans by ACGIH

Is not regulated by OSHA as a carcinogen.

Cobalt dust is irritating to eyes and skin. May cause allergic sensitivity dermatitis. Cross sensitization occurs between cobalt, nickel and chromium. Inhalation of dust may cause asthma like disease with cough and dyspnea. May progress to interstitial pneumonia with fibrosis.

Ingestion of cobalt causes vomiting, diarrhea, sensations of hotness.

First aid: Remove victim from source and seek medical attention from physician immediately.

Cupric oxide:

Routes of entry: Inhalation and Ingestion.

Inhalation of the dust causes irritation to respiratory tract, symptoms may include coughing, sore throat, and shortness of breath. When heated may give off copper fume which can cause symptoms similar to the common cold, including chills and stuffiness to the head.

Ingestion can cause systemic copper poisoning. Symptoms may include capillary damage, headache weak pulse, kidney and liver damage.

First aid: Remove victim from source and seek medical attention from physician immediately.

Fluorides:

Routes of Entry: Inhalation, Ingestion and Skin absorption.

Acute exposure to fluorine dust, mists or fumes may cause irritation to the eyes, skin, mucous membranes and lungs. When heated to decomposition emits toxic fumes of fluoride.

Chronic exposure to fume, mist, and dust may cause nosebleeds, pulmonary edema bronchospasm.

Ingestion of fluorides may cause nausea, vomiting, abdominal cramps and diarrhea.

First aid: Remove victim from source and seek medical attention from physician immediately .

Iron oxide:

Routes of Exposure: Ingestion and Inhalation

Inhalation of iron fumes may cause a benign pneumoconiosis.

Lead oxide:

Routes of Entry: Ingestion and Inhalation

Acute exposure can cause lead encephalopathy seizures, coma and death.

Chronic exposure may cause damage to male and female reproductive organs. Signs of exposure include loss of appetite, abdominal pain, headaches, nausea, joint pain, insomnia, fatigue. May also cause damage to central nervous system. May cause kidney damage without any symptomology. May disrupt blood forming causing anemia.

First aid: Remove victim from source and seek medical attention from physician immediately.

Manganese oxide:

Routes of Entry: Ingestion and Inhalation

Inhalation can cause a flu-like illness (metal fume fever) This 24-48 hour illness is characterized by chills, fever, dryness in the mouth and throat and headache.

Ingestion may cause abdominal pain and nausea.

First aid: Remove victim from source and seek medical attention from physician immediately.

Nickel oxide:

Routes of entry: Inhalation and Ingestion

Skin sensitization frequently occurs with exposure to nickel and nickel compounds resulting in eczema.

Acute exposure may cause irritation of the conjunctive and mucous membrane of the upper respiratory tract.

First aid: Remove victim from source and seek medical attention from physician immediately.

Selenium:

Routes of Entry: Ingestion and Inhalation

Some compounds of selenium are strong irritants to upper respiratory tract and the eyes. Is capable of antagonizing toxic effects of other metals, such as As and Cd

Inhalation of fumes may cause irritation of the nose, eye, upper respiratory tract and tightness of the chest.

Severe exposure may cause pulmonary edema. May have garlic odor in breath, metallic taste in mouth, pallor, lassitude, giddiness.

First aid: Remove victim from source and seek medical attention from physician immediately.

Silica oxide:

Route of entry: Inhalation

Chronic exposure can cause silicosis, a restrictive pulmonary fibrosis disease.

Uranium oxide:

Routes of Entry: Ingestion and Inhalation

Uranium compounds emit weakly radioactive alpha particles which cannot pass through the skin but can enter the body through inhalation or ingestion as dust. Avoid inhalation of fine dust. Systemic poisoning signs are nausea vomiting and diarrhea.

First aid: Remove victim from source and seek medical attention from physician immediately.

Zinc oxide:

Routes of entry: Inhalation and Ingestion.

Acute exposure to fumes may cause "metal fume fever", manifested by chills, fever, chest tightness, cough, dyspnea, fatigue and joint pain.

First aid: Remove victim from source and provide fresh air. Fume fever will last 24-48 hours.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case of spill: Sweep up broken glass-vacuum area. In case of spill of powder should use HEPA filter on vacuum, wet wash, wipe area.

Waste disposal method: General refuse

Precautions to be taken in handling and storing: Product should be stored in stable location to prevent breakage or spillage.

Other precautions: Molten products should be handled with due caution by trained individuals.

SECTION VIII - CONTROL MEASURES

Respiratory protection: When grinding or handling powders or fine frit or working around molten products should use NIOSH approved respirator with P-100 filters.

Ventilation: Local exhaust when grinding or working with molten product.

Protective gloves: As needed for cuts or burns as conditions warrant.

Eye Protection: Recommended when grinding, breaking rod or working with molten product.

Other protective equipment: Aprons or protective overalls recommended when handling bulk powders.

Work/Hygenic Practices: Wash hands and face after handling bulk products or powder before eating, smoking or drinking.