Reference number： 0085-S -00

Safety Data Sheet

Chemical Substances and Company Information

Product name (Glass type)	S-LAM51		
Name of manufacturer	Ohara Incorporated		
Address	15-30 Oyama,1-Chome, Chuo-ku, Sagamihara-shi, Kanagawa 252-5286, Japan		
Issuing Department	Environmental Safety Section , General Affairs Department	TEL:042-772-5118	FAX:042-774-1071
Executing Department	Material Production Control Section , Optical Material Business Unit	TEL:042-772-5115	FAX:042-774-2314
Date of creation	Nov 18, 2014	Date of revision	

Hazards Identification

Optical glasses are physically and chemically stable and are not hazardous. However, the following danger hazardousness is concerned during processing of optical glasses.

Hazards : When dust inhales during dry processing and melting, may cause chronic or cumulative health impairment. And gas inhales during melting, may cause acute poisoning and chronic or cumulative health impairment including cancer.

Environmental effects : Pay attention to the concentrations of discharge density of gas during melting as they may damage the ecosystem.

GHS classification(1 - 115)		Al_2O_3	B_2O_3	BaO	CaO
Physical hazards	Explosives	Not applicable	Not applicable	Not applicable	Not applicable
	Flammable / Flammable gases	Not applicable	Not applicable	Not applicable	Not applicable
	Flammable / Flammable aerosols	Not applicable	Not applicable	Not applicable	Not applicable
	Combustion support / Oxidizing gases	Not applicable	Not applicable	Not applicable	Not applicable
	Gases under pressure	Not applicable	Not applicable	Not applicable	Not applicable
	Flammable liquids	Not applicable	Not applicable	Not applicable	Not applicable
	Flammable solids	Not classified	Not classified	Not classified	Not classified
	Self-reactive substances and mixtures	Not applicable	Not applicable	Not applicable	Not applicable
	Pyrophoric liquids	Not applicable	Not applicable	Not applicable	Not applicable
	Pyrophoric solids	Not classified	Not classified	Not classified	Not classified
	Self-heating substances and mixtures	Not classified	Not classified	Not classified	Not classified
	Substances and mixtures which, in contact with water, emits flammable gases	Not classified	Not classified	Not classified	Not classified
	Oxidizing liquids	Not applicable	Not applicable	Not applicable	Not applicable
	Oxidizing solids	Not classified	Classification not possible	Classification not possible	Classification not possible
	Organic peroxides	Not applicable	Not applicable	Not applicable	Not applicable
	Corrosive to metals	Classification not possible	Classification not possible	Classification not possible	Classification not possible
Health hazards	Acute toxicity(Oral)	Not classified	Category 5	Classification not possible	Category 5
	Acute toxicity(Skin)	Classification not possible	Classification not possible	Classification not possible	Classification not possible
	Acute toxicity(Inhalation: Gas)	Not applicable	Not applicable	Not applicable	Not applicable
	Acute toxicity(Inhalation: Vapour)	Classification not possible	Classification not possible	Classification not possible	Classification not possible
	Acute toxicity(Inhalation: Dust)	Classification not possible	Classification not possible	Classification not possible	Classification not possible
	Acute toxicity(Inhalation: Mist)	Not applicable	Classification not possible	Not applicable	Not applicable
	Skin corrosion / Irritation	Classification not possible	Category 3	Category 3	Category 1C
	Serious eye damage / Eye irritation	Classification not possible	Category 2A-2B	Category 2B	Category 1
	Respiratory sensitization	Classification not possible	Classification not possible	Classification not possible	Classification not possible
	Skin sensitization	Classification not possible	Classification not possible	Classification not possible	Not classified
	Germ cell mutagenicity	Classification not possible	Classification not possible	Classification not possible	Classification not possible
	Carcinogenicity	Not classified	Classification not possible	Classification not possible	Classification not possible
	Reproductive toxicity	Classification not possible	Classification not possible	Classification not possible	Classification not possible
	Specific target organ toxicity-Single exposure	Category 3 (Respiratory tract irritation)	Category 3 (Respiratory tract irritation)	Category 1 (Heart, Digestive system, Muscle)	Category 1 (Respiratory system)
				Category 2 (Nervous system)	Category 2 (Systemic toxicity,Digestive organ)
				Category 3 (Respiratory tract irritation)	
	Specific target organ toxicity-Repeated exposure	Category 1 (Inhale：Lung)	Classification not possible	Category 1 (Respiratory system)	Category 1 (Respiratory system)
	Aspiration hazard	Classification not possible	Classification not possible	Classification not possible	Category 1
Environmental Hazards	Hazardous to the aquatic environment (Acute)	Classification not possible	Not classified	Classification not possible	Not classified
	Hazardous to the aquatic environment (Chronic)	Classification not possible	Not classified	Classification not possible	Not classified
Symbols					
					
Signal Word		Danger	Warning	Danger	Danger

GHS classification(1 - 115)		Sb_2O_3	SiO_2	TiO_2	ZrO_2
Physical hazards	Explosives	Not applicable	Not applicable	Not applicable	Not applicable
	Flammable / Flammable gases	Not applicable	Not applicable	Not applicable	Not applicable
	Flammable / Flammable aerosols	Not applicable	Not applicable	Not applicable	Not applicable
	Combustion support / Oxidizing gases	Not applicable	Not applicable	Not applicable	Not applicable
	Gases under pressure	Not applicable	Not applicable	Not applicable	Not applicable
	Flammable liquids	Not applicable	Not applicable	Not applicable	Not applicable
	Flammable solids	Not classified	Not classified	Not classified	Not classified
	Self-reactive substances and mixtures	Not applicable	Not applicable	Not applicable	Not applicable
	Pyrophoric liquids	Not applicable	Not applicable	Not applicable	Not applicable
	Pyrophoric solids	Not classified	Not classified	Not classified	Not classified
	Self-heating substances and mixtures	Not classified	Not classified	Not classified	Not applicable
	Substances and mixtures which, in contact with water, emits flammable gases	Not classified	Not classified	Not classified	Not classified
	Oxidizing liquids	Not applicable	Not applicable	Not applicable	Not applicable
	Oxidizing solids	Classification not possible	Classification not possible	Not classified	Not classified
	Organic peroxides	Not applicable	Not applicable	Not applicable	Not applicable
	Corrosive to metals	Classification not possible	Classification not possible	Classification not possible	Classification not possible
Health hazards	Acute toxicity(Oral)	Category 5	Classification not possible	Not classified	Classification not possible
	Acute toxicity(Skin)	Classification not possible	Classification not possible	Not classified	Not applicable
	Acute toxicity(Inhalation: Gas)	Not applicable	Not applicable	Not applicable	Not applicable
	Acute toxicity(Inhalation: Vapour)	Classification not possible	Not applicable	Classification not possible	Classification not possible
	Acute toxicity(Inhalation: Dust)	Classification not possible	Classification not possible	Not classified	Not applicable
	Acute toxicity(Inhalation: Mist)	Not applicable	Not applicable	Not applicable	Not applicable
	Skin corrosion / Irritation	Classification not possible	Classification not possible	Not classified	Not classified
	Serious eye damage / Eye irritation	Category 2B	Classification not possible	Category 2B	Classification not possible
	Respiratory sensitization	Classification not possible	Classification not possible	Classification not possible	Classification not possible
	Skin sensitization	Classification not possible	Classification not possible	Classification not possible	Classification not possible
	Germ cell mutagenicity	Not classified	Not classified	Not classified	Not applicable
	Carcinogenicity	Category 1B	Category 1A	Category 2	Not applicable
	Reproductive toxicity	Category 1B	Classification not possible	Classification not possible	Classification not possible
	Specific target organ toxicity-Single exposure	Category 1 (Heart)	Category 1 (Respiratory system)	Classification not possible	Category 3 (Respiratory tract irritation)
		Category 2 (Respiratory system)			
	Specific target organ toxicity-Repeated exposure	Category 1 (Respiratory system)	Category 1 (Respiratory system, Kidney)	Classification not possible	Classification not possible
	Aspiration hazard	Classification not possible	Classification not possible	Classification not possible	Classification not possible
Environmental Hazards	Hazardous to the aquatic environment (Acute)	Category 3	Classification not possible	Classification not possible	Classification not possible
	Hazardous to the aquatic environment (Chronic)	Category 3	Classification not possible	Category 4	Classification not possible
Symbols					
Signal Word		Danger	Danger	Warning	Warning

Composition / Information on Ingredients

Substance / Mixture: Mixture

Ingredients and contents

Chemical name	Chemical formula	Industrial Safety and Health Law		Chemical Management Promotion Law (Responding to revised government ordinance of Oct 1, 2009)							Poisonous and Deleterious Substances Control Act
		Hazardous substances of which notification of names is required	Content (Weight %)	Names of designated chemical substances	Content (Weight %) Note 1	Appended table number	Item number	Class 1 designated chemical substance	Specified Class 1 designated chemical substance	Class 2 designated chemical substance	
Silicon dioxide	SiO_2	Silica	20 - 30	—	—	—	—	—	—	—	—
Barium oxide	BaO	Barium and its water-soluble compounds	20 - 30	—	—	—	—	—	—	—	○
Boron trioxide	B_2O_3	Boron trioxide	10 - 20	Boron compounds	15	Table 1	405	○	—	—	—
Calcium oxide	CaO	Calcium oxide	2 - 10	—	—	—	—	—	—	—	—
Zirconium oxide	ZrO_2	Zirconium compounds	2 - 10	—	—	—	—	—	—	—	—
Titanium dioxide	TiO_2	Titanium dioxide	2 - 10	—	—	—	—	—	—	—	—
Aluminium oxide	Al_2O_3	Aluminium oxide	0 - 2	—	—	—	—	—	—	—	—
Antimony trioxide	Sb_2O_3	Antimony and its compounds	0 - 2	Antimony and its compounds	0.10	Table 1	31	○	—	—	○

Note 1: Weight percentages of relevant substances are listed in accordance with the Chemical Management Promotion Law(Japan)

First Aid Measures

Eye contact : If the grinding or polishing liquids come into contact with eyes, immediately rinse the eyes with clean water and obtain a medical diagnosis, if necessary. In the case of contact with dust from dry processing, be careful to avoid damaging the eyeballs and obtain a medical diagnosis.

Mouth contact : If grinding and polishing liquids and dust enter the mouth, rinse with plenty of water. If ingestion occurs, give the patient plenty of water and induce vomiting, then obtain a medical diagnosis, if necessary.

Fire-Fighting Measures

Since optical glasses are nonflammable, any extinguishing media may be used.

Spillage Countermeasures

Grinding and polishing liquids : Stop the flow with sandbags or the like to prevent the spill from contaminating soil or being absorbed into wastewater systems such as sewers. Collect as much of the released liquid as possible into an empty container.

Dust : Prevent dust from contaminating soil or being absorbed into wastewater systems such as sewers, and collect as much of the released dust as possible into an empty container. Be sure to remain upwind and wear a dust mask when dealing with dust spills.

Handling and Storage

Since optical glasses are physically and chemically stable, no precautions are required in handling and storage.
During grinding, polishing, and dry processing

* When handling, be careful to prevent grinding and polishing liquids, grinding and polishing waste, and dust from dry processing from escaping and contaminating the environment; and
* Gargle and wash hands thoroughly after work.

Exposure Control / Personal Protection

Although there is no potential hazard in exposure to optical glass due to its physical and chemical stability, exposure to the mist scattered during wet processing and the scattered dust created during dry processing may result in injury.

During wet processing : Prevent mist from scattering by providing the processing machine with a protective cover or the like.

During dry processing : Prevent dust from scattering by installing a local exhaust system or the like.Wear a dust mask. Wear eye protection, if necessary.

Control concentrations of chemical substances

Chemical substance name	Dust
Control concentration	E=3.0 mg/m^3

Physical and Chemical Properties

Physical state	:	Solid
Color	:	Pale yellow, transparent or colorless and transparent
Odor	:	Odorless
pH	:	Not applicable
Temperature of changing physical state (Yield point)	:	680℃
Specific gravity	:	3.79
Solubility	:	Low

Stability and Reactivity

Stability	:	Stable
Reactivity	:	Normally unobservable
Decomposition products	:	Normally unpredictable

Toxicological Information

Since optical glasses are physically and chemically stable, they do not have acute toxicity or local effects.
Grinding and polishing liquids and grinding and polishing waste and dust have:

Acute toxicity	:	No information
Carcinogenicity	:	No information
Chronic toxicity	:	Cumulative chronic toxicity through inhalation and skin contact

Ecological Information

Since optical glasses are physically and chemically stable, they have no ecological effects.
Gas generated during melting does not have hazardousness to the ozone layer.

Disposal Considerations

Commission disposal to approved and licensed waste disposers in accordance with the relevant laws and regulations concerning the disposal and handing of wastes.

Transport Information

None

Regulatory Information(Japan)

Industrial Safety and Health Law, enforcement ordinance of the same, bylaw of the same
Pneumoconiosis Law, enforcement regulations of the same
Ordinance on the Prevention of Dust Hazard
Ordinance on the Prevention of Lead Poisoning
Ordinance on the Prevention of Hazards due to Specified Chemical Substances
Working Environment Measurement Law, enforcement ordinance of the same, enforcement bylaw of the same, standard of the same, standards for working environment evaluation
Water Pollution Control Law, enforcement ordinance of the same, enforcement bylaw of the same, prefecture and ministry ordinances, notifications, and the like stipulating effluent standards
Chemical Management Promotion Law
Soil Contamination Countermeasures Act, enforcement ordinance of the same, enforcement regulations of the same.
Poisonous and Deleterious Substances Control Act, enforcement ordinance of the same, enforcement regulations of the same.
Waste Disposal and Public Cleansing Law, enforcement ordinance of the same, enforcement bylaw of the same

●Please confirm applicability of laws and regulations depending upon the site scale, installed capacity, and the like.
●Make sure you are aware of and adhere to all applicable local regulations.

Other Information

Contact us if you wish to melt down glass for recycling or other purposes.