

**Material Safety Data Sheet (glass)**

Product and company identification

Product name (brand name) ND0

Name of company HOYA CANDEO OPTRONICS Corporation  
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 Update -

Composition, information on ingredients

Classification between single and mixture products Mixture

Chemical ingredient and content

Chemical name	Chemical formula	Industrial Safety and Health Law		PRTR (Pollutant Release and Transfer Register)						
		Hazardous material name to be notified	Content (Weight %)	Specified chemical substance name	Content (Weight %) Note 1,	Attached Table No.	No.	Class I designated substance	Specified Class I designated chemical substance	Class II designated substance
Silica	SiO <sub>2</sub>	Silica	60 to 70	-	-	-	-	-	-	-
Boron oxide	B <sub>2</sub> O <sub>3</sub>	Boron trioxide	10 to 20	Boron and its compound	14.4	1	405	O	-	-
Aluminum oxide	Al <sub>2</sub> O <sub>3</sub>	Aluminum oxide	0 to 10	-	-	-	-	-	-	-
Sodium oxide	Na <sub>2</sub> O	Sodium oxide	0 to 10	-	-	-	-	-	-	-
Potassium oxide	K <sub>2</sub> O	Potassium oxide	10 to 20	-	-	-	-	-	-	-
Cobalt oxide	Co <sub>2</sub> O <sub>3</sub>	Cobalt and its compound	0 to 10	Cobalt and its compound	1.000	1	132	O	-	-
Iron oxide	Fe <sub>3</sub> O <sub>4</sub>	Iron oxide	10 to 20	-	-	-	-	-	-	-

Note 1. Conforming to PRTR (Pollutant Release and Transfer Register), mass % of each ingredient is written.

Hazards identification

No health effects are expected from optical glass as it is physically and chemically stable.

Hazardous property: If the grinding and polishing liquids are swallowed or the dust generated is inhaled during dry cutting, it may be hazardous to chronic and accumulative health conditions, such as oncogenesis.

Environmental impact: Note the drainage concentration of grinding and polishing liquid. It may be hazardous to the ecosystem.

First aid measures

- Eye contact : Rinse with clean water immediately when the eyes are affected by the grinding/polishing liquid. Refer to medical attention if required.  
Be careful not to hurt the eyes and refer for medical attention when the eyes are affected during dry cutting.
- Mouth contact : Rinse the mouth when the mouth is affected by any of the grinding/polishing liquid and dust. If swallowed, drink large amounts of water and spit it out and refer for medical attention if required.

Fire-fighting measures

Optical glass is noncombustible and any extinguishing equipment can be used.  
When glass is exposed to high temperatures due to a fire, fluoride gas may be generated. Therefore, move the glass concerned to a safe position promptly in case of a fire. When the fluoride gas is generated, do not stand in the direction of dust spill and wear a dust mask so as not to inhale the fluoride gas. Refer to medical attention when inhaling the gas.

Accidental release measures

- Grinding and polishing liquid spills : Stop spills with sandbags or the like, to prevent it from spreading into soil and flowing into drainage systems.  
Collect the waste fluid spilled in an empty container.
- Dust spill : Prevent it from spreading into soil and flowing into drainage systems.  
Collect the dust spilled in an empty container.  
Do not stand in the direction of dust spill and wear a dust mask.

Handling and storage

Optical glass is physically and chemically stable so that no special cares are required when handling and storing.  
When grinding, polishing and dry cutting  
 \* Care should be taken not to scatter the grinding/polishing liquid, grinding/polishing waste and dust from dry cutting.  
 \* After finishing the work, gargle and wash hands.

Exposure control and personal protection

Optical glass is physically and chemically stable, however, exposure may occur when mist and dust scatter during wet and dry cuttings, respectively.  
 Wet cutting: Use a protective cover for a processing machine to prevent the scattering of mist.  
 Dry cutting: Install a local exhaust system to prevent the scattering of dust.  
 Wear a dust mask for the protective equipment.  
 Also, wear protective glasses if required.

Standard control concentration of chemical substance

Chemical substance name	Dust		
Standard control concentration	E=2.9mg/m <sup>3</sup>		

Physical and chemical properties

Physical condition	:	Solid
Color	:	Black
Odor	:	Odorless
PH	:	Not applicable
Physical condition changing temperature (yield point)	:	570 °C
Specific gravity	:	2.47
Solubility	:	Hardly soluble

Stability and reactivity

Stability	:	This product is stable.
Reactivity	:	Usually no reactivity
Decomposition product	:	Usually none

Toxicological information

Optical glass is physically and chemically stable and has neither acute toxicity nor a local effect.

Grinding and polishing liquid, grinding/polish waste and dust have the following properties.

Acute toxicity:	Not known
Carcinogenicity:	Not known
Chronic toxicity:	Accumulative chronic toxicity is affected by inhalation and skin contact.

Ecological information

Optical glass is physically and chemically stable and has no influence on ecology.

When the grinding/polish drainage concentration exceeds the reference value of Water Pollution Control Law as shown below, the chronic toxicity of environmental accumulation is present.

Control subject substance			
Drainage standard or occupational exposure limits			

Disposal consideration

Conform to Wastes Disposal and Public Cleaning Law and contact an authorized disposal trader.

Transport information

No applicable information was found

Regulation information

Industrial Safety and Health Law, its enforcement ordinance and regulations,  
Pneumoconiosis Law and its enforcement regulations,  
Ordinance on Prevention of Hazards Due to Dust,  
Ordinance on Prevention of Lead Poisoning,  
Ordinance on Prevention of Hazards due to Specified Chemical Substance,  
Working Environment Measurement Law, its enforcement ordinance, enforcement regulations, standard and work environment  
evaluation standards,  
Prefecture ministerial ordinance and notification stipulating Water Pollution Control Law, its enforcement ordinance, enforcement  
regulations and drainage standards,  
PRTR (Pollutant Release and Transfer Register)  
Wastes Disposal and Public Cleaning Law, its enforcement ordinance and enforcement regulations,

- Confirm the ordinance for the scale of office or installed capacity if applicable or not.
- Confirm regulations peculiar to a region separately.

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Other information

Consult us separately when remelting the glass for recycling.

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