

**Material Safety Data Sheet (glass)**

## Product and company identification

Product name (brand name) ND10

Name of company HOYA CANDEO OPTRONICS Corporation  
 Address 3-5-24, Hikawa-cho, Toda-shi, Saitama, 335-0027 JAPAN  
 Division in charge Quality & Environmental management  
 Tel. +81- 48 - 447 - 6052  
 FAX +81- 48 - 447 - 6053  
 Issue date 24-Jun-16  
 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 %)<br>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 | ○                            | -   | -                             |
| Aluminum oxide | Al <sub>2</sub> O <sub>3</sub> | Aluminum oxide                         | 0 to 10            | -  | -                             | -                  | -   | -                            | -   | -                             |
| Zinc oxide     | ZnO                            | Zinc oxide                             | 0 to 10            | Zinc water-soluble compound                    | 4.2                           | 1                  | 1   | ○                            | -   | -                             |
| Cobalt oxide   | Co <sub>2</sub> O <sub>3</sub> | Cobalt and its compound                | 0 to 10            | Cobalt and its compound                        | 0.027                         | 1                  | 132 | ○                            | -   | -                             |
| Iron oxide     | Fe <sub>3</sub> O <sub>4</sub> | Iron oxide                             | 0 to 10            | -  | -                             | -                  | -   | -                            | -   | -                             |

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.  
 Prevent it from spreading into soil and flowing into drainage systems.  
 Dust spill : 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.

Standard control concentration of chemical substance

|                         |                        |  |  |
|-------------------------|------------------------|--|--|
| Chemical substance name | Dust                   |  |  |
| Standard control        | 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) : 595 °C  
 Specific gravity : 2.43  
 Solubility : Hardly soluble

Stability and reactivity

Stability : This product is stable.  
 Reactivity : Usually no reactivity  
 Decomposition : 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 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  
Prefecture ministerial ordinance and notification stipulating Water Pollution Control Law, its enforcement ordinance, enforcement  
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.

---

Other information

Consult us separately when remelting the glass for recycling.

---