MATERIAL SAFETY DATA SHEET

1.IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name/designation NORITAKE DETAIL CHECKER

1.2 Relevant identified uses of the substance or mixture and uses advised

Relevant identified uses Dental Material

Uses advised against No information

1.3 Details of the supplier of the safety data sheet

・Manufacturer:

Kuraray Noritake Dental Inc.

300 Higashiyama, Miyoshi-cho, Miyoshi, Aichi 470-0293, Japan

・Supplier:

For US

Kuraray America, Inc.

33 Maiden Lane, 6th Floor, New York, NY 10038 U.S.A.

Phone: 800-879-1676 Fax: 888-700-5200

Website: www.kuraraydental.com

For Europe

Kuraray Europe GmbH

Philipp-Reis-Str. 4, 65795 Hattersheim am Main, Germany

Phone: +49 (0)69 305 35 840 Fax: +49 (0)69 305 35 640

E-mail: dental@kuraray.de

For Other countries

Kuraray Noritake Dental Inc.

・Information department: Supplier

2.HAZARDS IDENTIFICATION

2.1 Classification of the mixture

GHS classification

Eye Irrit. 2B	H320
Repr. 1B	H360
STOT SE 1	H370
STOT RE 1	H372

2.2 Label elements

Hazard pictograms

Signal word:

Danger

Hazard statements:

H320 Causes eye irritation.

H360 May damage fertility or the unborn child.

H370 Causes damage to organs.

H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary statements:

P201 Obtain special instructions before use.

MATERIAL SAFETY DATA SHEET

P202 Do not handle until at safty precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective glove/protective clothing/eye protection/face protection.
P281 Use Personal protective equipment as required.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311 If exposed: Call a POISON CENTER or doctor/physician.
P308+P313 If exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P321 Specific treatment (see first aid statements on this label).
P337+P313 If eye irritation persists: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

3.COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Description of the mixture: —
3.2 Hazardous ingredients:

CAS No.	EC-No.	MITI-No.	% (w/w)	name	Remark
107-21-1	203-473-3	2-230	20-30	Ethylene glycol	

4.FIRST AID MEASURES

4.1 Description of first aid measure

General notes	Get immediate medical advice/attention.
If on skin	Wash with plenty soap and water.
If inhaled	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If swallowed	Call a POISON CENTER or doctor/physician if you feel unwell.
If in eyes	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Notes for the doctor	Pass on all available product information.

4.2 Most important symptoms and effects, both acute and delayed.
No information
4.3 Indication of immediate medical attention and special treatment needed.
No information

5.FIRE-FIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Water-spray, CO_2, powder, sand or foam, etc.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unusable extinguishing media
No information available.
5.2 Special hazards arising from the substance or mixture
Hazardous combustion products There is a possibility that the gas with stimulation or toxicity is produced depending on the kind of a fire.

5.3 Advice for fire-fighters

If it is not very dangerous, move containers from a fire in the surrounding area.
During extinction, wear a suitable heat-resistant protective suits against chemicals and self contained breathing apparatus.
Extinguish fire by pouring or spreading extinguishing media on the origin of a fire.
Extinguish fire from windward side as much as possible.
Extinguish fire by the method of covering tightly or suffocation is preferable.
Even after extinction, cool down containers by using plenty of water.

6.ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency

Protective equipment　Operators wear suitable protective equipment refer to section8 and avoid inhalation and contact with eyes and skin.

Removal of ignition sources, provision of sufficient ventilation, control of dust
Remove every source of ignition immediately. (Prohibit smoking, using sparks and flames nearby this product.) Ventilate for exhaust to keep concentration in air below a limit of exposure.

Emergency procedures　Isolate this product immediately and keep proper distance to every direction as released area.
Stop leakage, if it is not dangerous. Isolate this product immediately and keep proper distance to every direction as released area.
Indicate that only authorized people can enter.
Do not touch released product and walk on it.

For emergency responders

Wear a chemical protective clothing.

6.2 Environmental Precautions

Prevent inflow into ditches, sinks, basements or closed places. Take notice not to discharge this product to rivers etc. and not to affect environment.

6.3 Methods and material for containment and cleaning up

For containment　Keep container tightly closed.

For cleaning up　If the amount of leakage is small, absorb it by dried sand, soil, sawdust and waste paper and collect it into a tightly covered container made of metal.

Other information　No information

6.4 Reference to other sections　See section 8 and 13.

6.5 Additional information　No information.

7.HANDLING AND STORAGE

7.1 Precautions for safe handling

Information on safe handing

Take measure against equipments written in section8 and wear protective equipment.
Exhaust locally and ventilate totally as written in section8.

To prevent handling of incompatible substances or mixtures

Avoid contact with incompatible materials. Please refer to section10.

To minimize the release to the environment

Take notice not to discharge this product to rivers etc. and not to affect environment.

Advice on general occupational hygiene

Obtain Instructions before using this product.
Do not handle products until you have read and understood every instruction for safety.

To prevent exposure, wear protective during operation.
Watch out for fire.
Prohibit using heated substances, sparks and fire on the periphery of this product.
Ventilate for exhaust to keep concentration in air below a limit of exposure.
Avoid inhaling dust and fume.
Do not touch, inhale or swallow this product.
Do not take polluted work clothes out of workshops.
Do not drink, eat or smoke during using this product.
Use this product only outside or well ventilated area.
Wash hands well after handling this product.
Avoid emitting this product to environment.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in dried and properly ventilated place.
Install equipments for lighting and ventilation which are necessary for handling and storing dangerous goods in a storage place.

Packaging materials

If containers are stipulated in transportation regulations of containers United Nations.

Requirements for storage rooms and vessels

Store apart from dangerous substance to mix and touch.
Seal a container and store it in a well ventilated and cool place.
It is preferable to store a container in a locked place.

Further Information on storage conditions

No information

7.3 Specific end use(s)

Recommendations

No information

Industrial sector specific solutions

No information

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

Chemical Name	Class	Exposure Limits	BASIS
Ethylene glycol	—	STEL Ceiling;100mg/m3(H)	ACGIH

8.2 Exposure controls

Appropriate engineering controls

When the mists are generated, the ignition source is made to seal up, and the exhaust device is installed.
Install ventilation facility if dust and fume occurs during hot heated processes.

Personal protection equipment

Eye and face protection : Use appropriate protectors for eyes.
Skin protection
Hand protection : Use appropriate protective gloves.
Body protection : Use appropriate protective clothes and masks if necessary.
Other protection : —
Respiratory protection : Wear appropriate respiratory protection.
Thermal hazards : —

MATERIAL SAFETY DATA SHEET

9.PHYSICAL AND CHEMICAL PROPERTIES

Physical state, shape and colors etc.	Clear Liquid
Odor	No odor
pH	No data
Melting point/coagulation point	No data
Boiling point	No data
Flash point	No data
Explosive range	No data
Vapor pressure	No data
Vapor density(air＝1)	No data
Relative density (density)	No data
Solubility	No data
Partition coefficient: octanol/ water	No data
Auto-ignition temperature	No data
Decomposition temperature	No data
Limit value of odor	No data
Vaporization speed (butyl acetate=1)	No data
Combustion Characteristics (solid and gas)	No data
Viscosity	No data

10.STABILITY AND REACTIVITY

10.1 Reactivity
Not in particular.
10.2 Chemical Stability
Stable, if it is use and a storage method described in this MSDS.
10.3 Possibility of hazardous reactions
Not in particular.
10.4 Conditions to avoid
Not in particular.
10.5 Incompatible materials
No data.
10.6 Hazardous decomposition product
No data.

11.TOXICOLOGICAL INFORMATION

11.1 Acute Toxicity
No information available
11.2 Skin corrosion/irritation
Not classified.
11.3 Serious eye damage/irritation
Causes eye irritation.
As Ethylene glycol
Based on the negative data on rat dominant lethal tests, absence of data on germ cell mutagenicity tests in vivo, and the negative data on somatic cell mutagenicity tests in vivo (chromosome aberration tests/micronucleus tests), described in CICAD 45 (2002).
11.4 Respiratory or skin sensitization
No information available
11.5 Germ cell mutagenicity

No information available

11.6 Carcinogenicity

No information available

11.7 Reproductive toxicity

May damage fertility or the unborn child.

As Ethylene glycol

Based on the description in the report on mouse continuous breeding and rat teratogenicity tetss (CICAD 45 (2002)): Malformations, retarded ossification and unossification are observed in offspring at dosing levels not toxic to dams.

11.8 STOT-single exposure

Causes damage to organs.

As Ethylene glycol

Based on the human evidence including: ″consciousness disorder, convulsions and stupor (after 34 days of accidental ingestion); an increase in urea nitrogen, creatinine and uric acid concentrations (blood examination); albuminuria, hematuria and nephropathy (urine examination); degeneration of convoluted tubules (renal biopsy); mild pulmonary congestion,″ ″acute effects are observed in four stages: effects on the central nervous system (after 0.5-12 hours of exposure); effects on the heart-lung system (after 12-36 hours of exposure); nephropathy in specimens surviving from Stage 1 and 2 (exposure to ethylene glycol); degeneration of the central nervous system″ (CERI Hazard Data 97-24 (1998)).

11.9 STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

As Ethylene glycol

Based on human evidence including ″loss of consciousness and nystagmus,″ ″mild headache and back ache, upper respiratory tract irritation″ (MOE Risk Assessment vol. 3 (2004)), and the evidence from animal studies including ″inflammatory degeneration of the lung and heart″ (MOE Risk Assessment vol. 3 (2004) The effects on experimental animals were observed at dosing levels within the guidance val ue ranges for Category 1.

11.10 Aspiration hazard

No information available

12.ECOLOGICAL INFORMATION

12.1 Toxicity

No information available

12.2 Persistence and degradability

No information available

12.3 Bioaccumulative potential

No information available

12.4 Mobility in soil

No information available

12.5 Other adverse effects

No information

13.DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product/ Packaging disposal	In disposal, follow relevant regulations and standards of municipalities. If industrial waste disposer permitted by governors or regional public organization handle disposition, commit it to them. If you commit a disposal of waste, notify sufficiently disposer of risk and harmfulness beforehand.

	Clean and recycle containers or dispose them properly based on relative regulations and standards of municipalities. When empty containers are disposed, its content must be removed completely.
Waste treatment options	Dispose of waste according to applicable local, state, federal laws and regulations.
Sewage disposal options	Do not discharge to a water source.
Other disposal recommendations	No information

13.2 Additional information

No information

14.TRANSPORT INFORMATION

Road/Rail(ADR/RID)	Not subject to ADR/RID.
Sea transport (IMDG)	Not subject to IMDG code.
Air transport (IATA)	Not Subject to IATA regulations.

15.REGULATORY INFORMATION

This MSDS is according to Globally Harmonized System of Classification and Labeling of Chemicals (GHS).
Use in accordance with local/regional/national/international regulations.

16.OTHER INFORMATION

16.1 Indication of changes and preparation date

Preparation date	13th May, 2011
Revised	13th May, 2011

16.2 Abbreviations and acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
ATE	Acute Toxicity Estimate
CAS No.	Chemical Abstract Service number
EC No.	EINECS and ELINCS Number
EINECS	European Inventory of Existing Commercial Substances
ELINCS	European List of notified Chemical Substances
GHS	Globally Harmonized System
LC50	Lethal concentration, 50%
LD50	Median Lethal Dose
MSDS	Material Safety Data Sheet
MITI No.	Ministry of International Trade and Industry Number
NITE	National Institute of Technology and Evaluation
OEL	Occupational Exposure Limit
STOT	Specific Target Organ Toxicity
(STOT) RE	Repeated Exposure
(STOT) SE	Single Exposure
TWA	Time Weighted Average

16.3 Key literature references and sources for data

The result of classification of substance by NITE Japan. (http://www.safe.nite.go.jp/ghs/list.html)

16.4 Handling of information given in this MSDS

Information given in this MSDS may be insufficient for not all records and references were investigated. Its content can be changed due to release of new data and correction of conventional theories. Therefore, when you use this MSDS for an important decision, it is recommended to check its content by running tests or to study its references carefully. We also do not guarantee the number about the content, physical or chemical properties. Notes are applicable to normal handling and care must be taken in case of special handling.