

Product Name: CERABIEN ZR Powder
MSDS No CERABIEN ZR Powder (J2005—G2)E ,Ver1.2
Revised: 29th October, 2010
1/7 Noritake Dental Supply Co., Limited.

MATERIAL SAFETY DATA SHEET

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

1.1 Product identifier

Trade name/designation CERABIEN ZR / Shade Base, Body, Enamel, Silky Enamel
Translucent, Cervical, Clear Cervical, Add-On, Modifier, Tissue
Mamelon, Opacious Body, Margin, Luster

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 Material Safety Data Sheet

Manufacturer/Supplier Noritake Dental Supply Co., Limited

Group in charge Engineering Group, R&D Department

Address 300 Higashiyama, Miyoshi-cho, Miyoshi

Aichi, 470-0293 JAPAN

1.4 Emergency Contact

Telephone No. +81-561-32-8953

E-mail info@noritake-dental.co.jp

Opening hours 9:00-17:00 (GMT+9:00)

Language of the telephone service Japanese or English

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture

GHS classification

Carc. 1A H350

2.2 Label elements

Hazard pictograms

Signal word:

Danger

Hazard statements:

H350 May cause cancer.

Precautionary statements:

P201 Obtain special instructions before use.

P202 Do not handle until at safety precautions have been read and understood.

P281 Use Personal protective equipment as required.

P308+P313 If exposed or concerned: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with
local/regional/national/international regulation.

Product Name: CERABIEN ZR Powder

MSDS No CERABIEN ZR Powder (J2005—G2)E ,Ver1.2

Revised: 29th October, 2010

2/7 Noritake Dental Supply Co., Limited.

MATERIAL SAFETY DATA SHEET

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

18186-89-0*

1-267, 1-517,

1-550

<1

COBALT NICKEL GRAY

PERICLASE (CPMA)

*

*Substance classified by the manufacture.

4. FIRST AID MEASURES

4.1 Description of first aid measure

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.

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, CO₂, 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 section 8 and avoid inhalation and contact with eyes and skin.

Removal of ignition sources, provision of sufficient ventilation, control of dust

Product Name: CERABIEN ZR Powder

MSDS No CERABIEN ZR Powder (J2005-G2)E , Ver1.2

Revised: 29th October, 2010

3/7 Noritake Dental Supply Co., Limited.

MATERIAL SAFETY DATA SHEET

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.

Indicate that only authorized people can enter.

Do not touch released product and walk on it.

For emergency responders

No information

6.2 Environmental Precautions

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 No information.

For cleaning up If the amount of leakage is small, absorb it by dried sand, soil, sawdust and waste

paper and collect it into an 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 handling

Take measure against equipments written in section 8 and wear protective equipment.

Exhaust locally and ventilate totally as written in section 8.

To Prevent handling of incompatible substances or mixtures

Avoid contact with incompatible materials. Please refer to section 10.

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.

Product Name: CERABIEN ZR Powder

MSDS No CERABIEN ZR Powder (J2005—G2)E , Ver1.2

Revised: 29th October, 2010

4/7 Noritake Dental Supply Co., Limited.

MATERIAL SAFETY DATA SHEET

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

Dust Class3

Respirable dust 2mg/m³

Total dust 8mg/m³

Japan Society for Occupational Health (2009)

— As Ni 0.1mg/m³

Control value: The Ministry of Labor (Japan)

— As Co 0.05mg/m³ Japan Society for Occupational Health (2009)

— As Co 0.02mg/m³

— As Ni 0.2mg/m³

COBALT NICKEL GRAY

PERICLASE (CPMA)

— As Zr 5mg/m³

AGCIH (2009)

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 : —

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state, shape and colors etc. White, Brown, Red, Blue Powder

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

Product Name: CERABIEN ZR Powder

MSDS No CERABIEN ZR Powder (J2005—G2)E ,Ver1.2

Revised: 29th October, 2010

5/7 Noritake Dental Supply Co., Limited.

MATERIAL SAFETY DATA SHEET

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

—

10.2 Chemical Stability

Stable, if it is use and a storage method described in this SDS.

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

No information available

11.3 Serious eye damage/irritation

No information available

11.4 Respiratory or skin sensitization

No information available

11.5 Germ cell mutagenicity

No information available

11.6 Carcinogenicity

May cause cancer.

As COBALT NICKEL GRAY PERICLASE (CPMA)

Carc. 1A by manufacture MSDS.

11.7 Reproductive toxicity

No information available

11.8 STOT-single exposure

No information available

11.9 STOT-repeated exposure

No information available

11.10 Aspiration hazard

Not applicable.

Product Name: CERABIEN ZR Powder

MSDS No CERABIEN ZR Powder (J2005-G2)E , Ver1.2

Revised: 29th October, 2010

6/7 Noritake Dental Supply Co., Limited.

MATERIAL SAFETY DATA SHEET

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 Labelling 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 29th October, 2010

Revised 29th October, 2010

Product Name: CERABIEN ZR Powder

MSDS No CERABIEN ZR Powder (J2005—G2)E , Ver1.2

Revised: 29th October, 2010

7/7 Noritake Dental Supply Co., Limited.

MATERIAL SAFETY DATA SHEET

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.

Product Name: Forming Liquid

MSDS No Forming Liquid (J2005-G2)E , Ver1.2

Revised: 3rd May, 2011

1/6 Noritake Dental Supply Co., Limited

MATERIAL SAFETY DATA SHEET

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

1.1 Product identifier

Trade name/designation EX-3 Forming Liquid / Carabien Forming Liquid / CZR Forming Liquid

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 Material Safety Data Sheet

Manufacturer/Supplier Noritake Dental Supply Co., Limited

Group in charge Engineering Group, R&D Department

Address 300 Higashiyama, Miyoshi-cho, Miyoshi

Aichi, 470-0293 JAPAN

1.4 Emergency Contact

Telephone No. +81-561-32-8953

E-mail info@noritake-dental.co.jp

Opening hours 9:00-17:00 (GMT+9:00)

Language of the telephone service Japanese or English

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture

GHS classification

Not classified.

2.2 Label elements

Hazard pictograms

No pictogram

Signal word:

No signal word

Hazard statements:

No statement

Precautionary statements:

No statement

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Description of the mixture: —

3.2 Hazardous ingredients: No hazard ingredient

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.

Product Name: Forming Liquid

MSDS No Forming Liquid (J2005—G2)E , Ver1.2

Revised: 3rd May, 2011

2/6 Noritake Dental Supply Co., Limited

MATERIAL SAFETY DATA SHEET

No information

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water-spray, CO₂, 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 section 8 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.

Product Name: Forming Liquid

MSDS No Forming Liquid (J2005-G2)E , Ver1.2

Revised: 3rd May, 2011

3/6 Noritake Dental Supply Co.,.Limited

MATERIAL SAFETY DATA SHEET

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Information on safe handling

Take measure against equipments written in section 8 and wear protective equipment.
Exhaust locally and ventilate totally as written in section 8.
To prevent handling of incompatible substances or mixtures
Avoid contact with incompatible materials. Please refer to section 10.
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

Product Name: Forming Liquid

MSDS No Forming Liquid (J2005-G2)E ,Ver1.2

Revised: 3rd May, 2011

4/6 Noritake Dental Supply Co.,.Limited

MATERIAL SAFETY DATA SHEET

Occupational Exposure limit values

No Information

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 : —

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.

Product Name: Forming Liquid
MSDS No Forming Liquid (J2005—G2)E ,Ver1.2
Revised: 3rd May, 2011
5/6 Noritake Dental Supply Co.,.Limited

MATERIAL SAFETY DATA SHEET

11. TOXICOLOGICAL INFORMATION

11.1 Acute Toxicity

No information available

11.2 Skin corrosion/irritation

No information available

11.3 Serious eye damage/irritation

No information available

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

No information available

11.8 STOT-single exposure

No information available

11.9 STOT-repeated exposure

No information available

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.

Product Name: Forming Liquid

MSDS No Forming Liquid (J2005-G2)E , Ver1.2

Revised: 3rd May, 2011

6/6 Noritake Dental Supply Co., Limited

MATERIAL SAFETY DATA SHEET

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 3rd May, 2011

Revised 3rd 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.