SAFETY DATA SHEET

Date of issue 1/8/2016 (month/day/year)
Version 1.01

Section 1. Chemical product and company identification

A. Product name : PR 1782 B 1/2 Part A
Product code : PR 1782 B 1/2 Part A

B. Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.
Use of the substance/ mixture : Coating. Paint. Painting-related materials.
Uses advised against : None identified.

C. Supplier's information : PPG Industries (Korea) Ltd.
608-829
21, Sinseon-ro 356beon-gil, Nam-gu,
Busan, Korea
Tel: +82-51-620-8211

Email Address Korea.MSDS@ppg.com

Emergency telephone number: : +82-51-620-8220

Section 2. Hazards identification

A. Hazard classification : ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2

B. GHS label elements, including precautionary statements

Symbol :

Signal word : Warning
Hazard statements : Harmful if swallowed or if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Section 2. Hazards identification

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response : Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

C. Other hazards which do not result in classification : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

CAS number/other identifiers

CAS number : Not applicable.

Chemical name	Common name	CAS #	%
manganese dioxide	MANGANESE DIOXIDE	1313-13-9	35 - <45
Terphenyl, hydrogenated	HYDROGENATED TERPHENYLS	61788-32-7	25 - <35
Zeolites	Zeolite	1318-02-1	5 - <15
Talc , not containing asbestiform fibres	Talc, non-asbestos form	14807-96-6	1 - <5
carbon black, respirable powder	CARBON BLACK	1333-86-4	1 - <5
terphenyl	TERPHENYLS	26140-60-3	1 - <5
bis(piperidinothiocarbonyl) tetrasulphide	DIPENTAMETHYLENETHIURAM TETRASULFIDE	120-54-7	1 - <5
stearic acid	STEARIC ACID	57-11-4	1 - <5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SUB codes represent substances without registered CAS Numbers.

Section 4. First aid measures

A. Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

B. Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

C. Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

D. Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

E. Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

A. Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

B. Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
metal oxide/oxides

C. Special equipment for fire-fighting : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Fire-fighting procedures : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-fighting measures

Section 6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

B. Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

C. Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

A. Precautions for safe handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Refer to special instructions/safety data sheet. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

B. Conditions for safe storage, including any incompatibilities : Do not store below the following temperature: 5°C (41°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

A. Occupational exposure limits

Ingredient name	Exposure limits
manganese dioxide	**Ministry of Labor (Republic of Korea, 8/2013).** TWA: 1 mg/m³, (as Mn) 8 hours. Form: Fume STEL: 3 mg/m³ 15 minutes. Form: Fume TWA: 1 mg/m³, (as Mn) 8 hours.
Terphenyl, hydrogenated	**Ministry of Labor (Republic of Korea, 8/2013).** TWA: 5 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours.
Zeolites	**ACGIH TLV (United States, 4/2014).** TWA: 1 mg/m³ 8 hours. Form: Respirable fraction
Talc , not containing asbestiform fibres	**Ministry of Labor (Republic of Korea, 5/2002).** TWA: 2 mg/m³ 8 hours. Form: Respirable dust TWA: 2 mg/m³ 8 hours. Form: Total dust with more than 30% of free SiO2 **Ministry of Labor (Republic of Korea, 8/2013).** TWA: 2 mg/m³ 8 hours. Form: Respirable fraction TWA: 6 mg/m³ 8 hours. Form: total fiber (fiber size less than 5 µm)
carbon black, respirable powder	**Ministry of Labor (Republic of Korea, 8/2013).** TWA: 3.5 mg/m³ 8 hours. Form: Respirable fraction **Ministry of Labor (Republic of Korea, 5/2002).** TWA: 5 mg/m³ 8 hours. Form: Total dust with less than 30% of free SiO2
terphenyl	**Ministry of Labor (Republic of Korea, 8/2013).** CEIL: 5 mg/m³

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

B. Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

C. Personal protective equipment

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Eye protection : Safety glasses with side shields.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and chemical properties

A. Appearance

Physical state : Liquid.

Color : Black.

B. Odor : Not available.

C. Odor threshold : Not available.

D. pH : Not available.

Section 9. Physical and chemical properties

E. Melting/freezing point : Not available.

F. Boiling point/boiling range : >37.78°C (>100°F)

G. Flash point : Closed cup: 93.33°C (200°F)

H. Evaporation rate : Not available.

I. Flammability (solid, gas) : Not available.

J. Lower and upper explosive (flammable) limits : Not available.

K. Vapor pressure : Not available.

L. Solubility : Insoluble in the following materials: cold water.

M. Vapor density : Not available.

N. Relative density : 1.76

O. Partition coefficient: n-octanol/water : Not available.

P. Auto-ignition temperature : Not available.

Q. Decomposition temperature : Not available.

R. Viscosity : Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)

S. Molecular weight : Not applicable.

Section 10. Stability and reactivity

A. Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

B. Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products.

C. Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

D. Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

A. Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation : Harmful if inhaled.

Ingestion : Harmful if swallowed.

Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Section 11. Toxicological information

Eye contact : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Eye contact : No specific data.

B. Health hazards

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
manganese dioxide	LD50 Oral	Rat	3478 mg/kg	-
Terphenyl, hydrogenated	LD50 Oral	Rat	17500 mg/kg	-
Zeolites	LD50 Oral	Rat	>5 g/kg	-
carbon black, respirable powder	LD50 Dermal	Rabbit	>3 g/kg	-
	LD50 Oral	Rat	>15400 mg/kg	-
terphenyl	LD50 Oral	Rat	1400 mg/kg	-
stearic acid	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	4600 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Classification	Route of exposure	Target organs
Zeolites	Category 3	Not applicable.	Respiratory tract irritation
Talc , not containing asbestiform fibres	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Classification	Route of exposure	Target organs
manganese dioxide	Category 2	Inhalation	brain

Aspiration hazard

Not available.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Additional information

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.
Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.
If splashed in the eyes, the liquid may cause irritation and reversible damage.
Ingestion may cause nausea, diarrhea and vomiting.
This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains bis(piperidinothiocarbonyl) tetrasulphide. May produce an allergic reaction.

Section 11. Toxicological information

Chemical name	Common name	CAS #	GHS Classification
manganese dioxide	MANGANESE DIOXIDE	1313-13-9	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (brain) (inhalation) - Category 2
Terphenyl, hydrogenated	HYDROGENATED TERPHENYLS	61788-32-7	AQUATIC HAZARD (LONG-TERM) - Category 4
Zeolites	Zeolite	1318-02-1	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Talc , not containing asbestiform fibres	Talc, non-asbestos form	14807-96-6	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
carbon black, respirable powder	CARBON BLACK	1333-86-4	CARCINOGENICITY - Category 2
terphenyl	TERPHENYLS	26140-60-3	ACUTE TOXICITY (oral) - Category 4 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1
bis(piperidinothiocarbonyl) tetrasulphide	DIPENTAMETHYLENETHIURAM TETRASULFIDE	120-54-7	SKIN SENSITIZATION - Category 1
stearic acid	STEARIC ACID	57-11-4	AQUATIC HAZARD (LONG-TERM) - Category 4

Section 12. Ecological information

A. Ecotoxicity

Not available.

B. Persistence and degradability

Not available.

C. Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
bis(piperidinothiocarbonyl) tetrasulphide	2.8	16.98	low
stearic acid	8.23	-	high

D. Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

E. Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

A. Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

B. Disposal precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
A. UN number	Not regulated.	Not regulated.	Not regulated.
B. UN proper shipping name	-	-	-
C. Transport hazard class(es)	-	-	-
D. Packing group	-	-	-
E. Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

F. Additional information

UN : None identified.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

A. Regulation according to ISHA

ISHA Article 37 : None of the components are listed.

ISHA Article 38 : None of the components are listed.

Article 2 of Youth Protection Act on Substances Hazardous to Youth : It is not allowed to sell to persons under the age of 19.

Section 15. Regulatory information

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:
manganese dioxide
Terphenyl, hydrogenated
Zeolites
Talc , not containing asbestiform fibres
carbon black, respirable powder
terphenyl

Exposure Standards established for Harmful Factors : None of the components are listed.

Harmful Factors Subject to Work Environment Measurement : The following components are listed: Manganese and inorganic compounds; Talc, non-asbestos form; Aluminum compounds

Harmful Factors Subject to Special Health Check-up : The following components are listed: Manganese and inorganic compounds; Aluminum and compounds

Hazardous Substances Subject to Control : The following components are listed: Manganese and its compounds; Aluminum and its compounds

B. Regulation according to TCCA

TCCA Toxic chemicals : Not applicable

TCCA Observational chemicals : None of the components are listed.

TCCA Article 32 (Banned) : None of the components are listed.

TCCA Article 32 (Restricted) : None of the components are listed.

TCCA Article 17 (TRI) : The following components are listed: Manganese and its compounds; Aluminium and its compounds

Korea inventory : All components are listed or exempted.

Accident Precaution chemicals : None of the components are listed.

C. Dangerous Materials Safety Management Act :

This product is not classified under the Dangerous Materials Safety Management Act.

D. Wastes regulation

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

E. Regulation according to other foreign laws

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information

A. References : Korean Ministry of Environment; Toxic Chemicals Control Act (TCCA)
Korean Ministry of Labor; Industrial Safety and Health Act
NIER Notice
Registry of Toxic Effects of Chemical Substances (RTECS)
U.S. Environmental Protection Agency, AQUIRE (Aquatic toxicity Information Retrieval) ECOTOX Database System.

B. Date of issue/Date of revision : **1/8/2016**

C. Version : **1.01**

Prepared by : EHS

D. Other

Procedure used to derive the classification

Classification	Justification
Acute Tox. 4, H302	Calculation method
Acute Tox. 4, H332	Calculation method
Skin Sens. 1, H317	Calculation method
Carc. 2, H351	Calculation method
STOT RE 2, H373	Calculation method
Aquatic Chronic 2, H411	Calculation method

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.