SAFETY DATA SHEET

PPG SSC Co., Ltd.

Date of issue 9/20/2022 (month/day/year)
Version 1

Section 1. Chemical product and company identification

A. Product name : SIGMARINE 48 RAL 1028
Product code : 00467651

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

Product use : Professional applications, Used by spraying.
Use of the substance/ mixture : Coating.
Uses advised against : Product is not intended, labelled or packaged for consumer use.

C. Supplier's or Importer's information : PPG SSC
(680-090)
19, Yeocheon-ro 217beon-gil, Nam-gu,
Ulsan, Korea
Tel: +82-52-210-8222
Email Address Korea.MSDS@PPG.COM
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Section 2. Hazards identification

A. Hazard classification : FLAMMABLE LIQUIDS - Category 3
CARCINOGENICITY - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 2

This product is classified in accordance with the Industrial Safety and Health Act and the Chemical Control Act.

B. GHS label elements, including precautionary statements

Symbol :



Signal word : Danger

Hazard statements : H226 - Flammable liquid and vapor.
H336 - May cause drowsiness or dizziness.
H350 - May cause cancer.
H372 - Causes damage to organs through prolonged or repeated exposure. (central nervous system (CNS), kidneys, liver)
H411 - Toxic to aquatic life with long lasting effects.

Section 2. Hazards identification

Precautionary statements

Prevention : P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating or lighting equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P273 - Avoid release to the environment.
P260 - Do not breathe vapor.
P270 - Do not eat, drink or smoke when using this product.

Response : P391 - Collect spillage.
P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

Storage : P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 - Keep cool.

Disposal : P501 - 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	Identifiers	%
Naphtha (petroleum), hydrodesulfurized heavy	NAPHTHA(PETROLEUM), HYDRODESULFURIZED HEAVY	CAS: 64742-82-1	30 - <40
titanium dioxide	TITANIUM DIOXIDE	CAS: 13463-67-7	1 - <5
2-ethylhexanoic acid, zirconium salt	ZIRCONIUM 2-ETHYLHEXANOATE	CAS: 22464-99-9	1 - <5
Xylene	XYLENES	CAS: 1330-20-7	1 - <5
ethylbenzene	ETHYLBENZENE	CAS: 100-41-4	0.1 - <1
2-butanone oxime	METHYL ETHYL KETOXIME	CAS: 96-29-7	0.1 - <1
Kerosine (petroleum), hydrodesulfurized	KEROSINE (PETROLEUM), HYDRODESULFURIZED	CAS: 64742-81-0	0.1 - <1
calcium bis(2-ethylhexanoate)	2-ETHYL-HEXANOIC ACID;CALCIUM SALT	CAS: 136-51-6	0.1 - <1
2-ethylhexanoic acid, cobalt salt	COBALT OCTOATE	CAS: 13586-82-8	0.1 - <1
ethanol	ETHYL ALCOHOL	CAS: 64-17-5	0.1 - <1
2-ethylhexanoic acid	2-ETHYLHEXANOIC ACID	CAS: 149-57-5	0.1 - <1

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.

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 dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

B. Specific hazards arising from the chemical : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. 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 oxides
nitrogen oxides
halogenated compounds
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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. 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. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. 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). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Materials such as cleaning rags, paper wipes and protective clothing, which are contaminated with the product may spontaneously self-ignite some hours later. To avoid the risks of fires, all contaminated materials should be stored in purpose-built containers or in metal containers with tight-fitting, self-closing lids. Contaminated materials should be removed from the workplace at the end of each working day and be stored outside.

Section 7. Handling and storage

B. Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

A. Occupational exposure limits

Ingredient name	Exposure limits
titanium dioxide	**Ministry of Employment and Labor (Republic of Korea, 1/2020).** TWA: 10 mg/m³ 8 hours. Form: total dust with less than 1% of free SiO2
2-ethylhexanoic acid, zirconium salt	**Ministry of Employment and Labor (Republic of Korea, 1/2020). [Zirconium and compounds]** STEL: 10 mg/m³, (as Zr) 15 minutes. TWA: 5 mg/m³, (as Zr) 8 hours.
Xylene	**Ministry of Employment and Labor (Republic of Korea, 1/2020). [Xylene]** STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.
ethylbenzene	**Ministry of Employment and Labor (Republic of Korea, 1/2020).** STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours.
Kerosine (petroleum), hydrodesulfurized	**ACGIH TLV (United States, 1/2021). [Kerosene] Absorbed through skin.** TWA: 200 mg/m³, (as total hydrocarbon vapor) 8 hours.
2-ethylhexanoic acid, cobalt salt	**Ministry of Employment and Labor (Republic of Korea, 1/2020). [Cobalt and inorganic compounds]** TWA: 0.02 mg/m³ 8 hours.
ethanol	**Ministry of Employment and Labor (Republic of Korea, 1/2020).** TWA: 1000 ppm 8 hours.
2-ethylhexanoic acid	**ACGIH TLV (United States, 1/2021).** TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction and vapor

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.

Section 8. Exposure controls/personal protection

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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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 : For prolonged or repeated handling, use the following type of gloves:

Recommended: natural rubber (latex), polyvinyl alcohol (PVA), Viton®
May be used: nitrile 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

A. Appearance

Physical state : Liquid.

Color : Not available.

B. Odor : Characteristic.

C. Odor threshold : Not available.

D. pH : Not applicable.

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: 60°C (140°F)

H. Evaporation rate : Not available.

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

J. Lower and upper explosive (flammable) limits : Greatest known range: Lower: 1.4% Upper: 7.6% (Naphtha (petroleum), hydrodesulfurized heavy)

K. Vapor pressure :

Ingredient name	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
xylene	6.7	0.89				

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

Solubility in water : Not available.

M. Vapor density : Not available.

N. Relative density : 1.02

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

P. Auto-ignition temperature :

Ingredient name	°C	°F	Method
Naphtha (petroleum), hydrodesulfurized heavy	280 to 470	536 to 878	

Q. Decomposition temperature : Not available.

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

Flow time (ISO 2431) : Not available.

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 : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds metal oxide/ oxides

Section 11. Toxicological information

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

Potential acute health effects

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Ingestion : Can cause central nervous system (CNS) depression.

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

Eye contact : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion : No specific data.

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

Eye contact : No specific data.

B. Health hazards

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Naphtha (petroleum), hydrodesulfurized heavy	LD50 Oral	Rat	>5000 mg/kg	-
titanium dioxide	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
2-ethylhexanoic acid, zirconium salt	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	>5 g/kg	-
Xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
2-butanone oxime	LD50 Dermal	Rabbit	1100 mg/kg	-
	LD50 Oral	Rat	100 mg/kg	-
Kerosine (petroleum), hydrodesulfurized	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m³	4 hours
	LD50 Dermal	Rat	17100 mg/kg	-
	LD50 Oral	Rat	7 g/kg	-
2-ethylhexanoic acid	LD50 Dermal	Rabbit	1.26 g/kg	-
	LD50 Oral	Rat	1600 mg/kg	-

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

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

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)

Name	Classification	Route of exposure	Target organs
Naphtha (petroleum), hydrodesulfurized heavy	Category 3	-	Narcotic effects
Xylene	Category 3	-	Narcotic effects
2-butanone oxime	Category 1	-	upper respiratory tract
	Category 3		Narcotic effects
Kerosine (petroleum), hydrodesulfurized	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Classification	Route of exposure	Target organs
Naphtha (petroleum), hydrodesulfurized heavy	Category 1	-	central nervous system (CNS)
Xylene	Category 1	-	central nervous system (CNS), kidneys, liver
2-butanone oxime	Category 2	-	blood system

Aspiration hazard

Section 11. Toxicological information

Name	Result
Naphtha (petroleum), hydrodesulfurized heavy	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
Kerosine (petroleum), hydrodesulfurized	ASPIRATION HAZARD - Category 1

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Additional information

Prolonged or repeated contact may dry skin and cause irritation. Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing.

Chemical name	Identifiers	GHS Classification
Naphtha (petroleum), hydrodesulfurized heavy	CAS: 64742-82-1	FLAMMABLE LIQUIDS - Category 4 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2
titanium dioxide	CAS: 13463-67-7	CARCINOGENICITY - Category 2
2-ethylhexanoic acid, zirconium salt	CAS: 22464-99-9	TOXIC TO REPRODUCTION - Category 2
Xylene	CAS: 1330-20-7	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
ethylbenzene	CAS: 100-41-4	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3
2-butanone oxime	CAS: 96-29-7	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1B CARCINOGENICITY - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE

Section 11. Toxicological information

		EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Kerosine (petroleum), hydrodesulfurized	CAS: 64742-81-0	FLAMMABLE LIQUIDS - Category 4 SKIN IRRITATION - Category 2 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2
calcium bis(2-ethylhexanoate)	CAS: 136-51-6	SERIOUS EYE DAMAGE - Category 1 TOXIC TO REPRODUCTION - Category 2
2-ethylhexanoic acid, cobalt salt	CAS: 13586-82-8	ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1B CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2
ethanol	CAS: 64-17-5	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2
2-ethylhexanoic acid	CAS: 149-57-5	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 TOXIC TO REPRODUCTION - Category 2

Section 12. Ecological information

A. Ecotoxicity

Product/ingredient name	Result	Species	Exposure
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
2-ethylhexanoic acid, zirconium salt	Acute LC50 >100 mg/l	Fish	96 hours
ethylbenzene	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours
	Chronic NOEC 1 mg/l Fresh water	Daphnia - Ceriodaphnia dubia	-
ethanol	Acute EC50 7640 mg/l Fresh water	Daphnia - Daphnia magna	48 hours

B. Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
ethylbenzene	-	79 % - Readily - 10 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Xylene	-	-	Readily
ethylbenzene	-	-	Readily
ethanol	-	-	Readily

C. Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Xylene	3.12	7.4 to 18.5	low
ethylbenzene	3.6	79.43	low
2-butanone oxime	0.63	5.01	low
ethanol	-0.35	-	low
2-ethylhexanoic acid	2.7	-	low

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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. 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	UN1263	UN1263	UN1263
B. UN proper shipping name	PAINT	PAINT	PAINT
C. Transport hazard class(es)	3	3	3
D. Packing group	III	III	III
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
E. Marine pollutant substances	Not applicable.	(Naphtha (petroleum), hydrodesulfurized heavy)	Not applicable.

Section 14. Transport information

Additional information

UN : None identified.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

F. Special precaution which a user to be aware of or needs to comply with in connection with transport or tranportation

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.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

A. Regulation according to ISHA

ISHA article 117 (Harmful substances prohibited from manufacture) : None of the components are listed.

ISHA article 118 (Harmful substances requiring permission) : 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.

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:
titanium dioxide
2-ethylhexanoic acid, zirconium salt
Xylene
ethylbenzene
Kerosine (petroleum), hydrodesulfurized
2-ethylhexanoic acid, cobalt salt
ethanol
2-ethylhexanoic acid

ISHA Enforcement Regs Annex 19 (Exposure standards established for harmful factors) : The following components are listed: cobalt and its inorganic compounds

ISHA Enforcement Regs Annex 21 (Harmful factors subject to Work Environment Measurement) : The following components are listed: titanium dioxide, zirconium and its compounds, xylene

Section 15. Regulatory information

ISHA Enforcement Regs Annex 22 (Harmful Factors Subject to Special Health Check-up) : The following components are listed: Zirconium and its compounds, Xylene

Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control) : The following components are listed: titanium dioxide, zirconium and its compounds, xylene

B. Regulation according to Chemicals Control Act

Article 11 (TRI) : The following components are listed: Xylene including o-,m-,p- isomer, Ethylbenzene, Cobalt and its compounds

Article 18 Prohibited (K-Reach Article 27) : None of the components are listed.

Article 19 Subject to authorization (K-Reach Article 25) : None of the components are listed.

Article 20 Restricted (K-Reach Article 27) : None of the components are listed.

Article 20 Toxic Chemicals (K-Reach Article 20) : Not applicable

Korea inventory : All components are listed or exempted.

Article 39 (Accident Precaution Chemicals) : None of the components are listed.

C. Dangerous Materials Safety Management Act :
Class: Class 4 - Flammable Liquid
Item: 4. Class 2 petroleums - Water-insoluble liquid
Threshold: 1000 L
Danger category: III
Signal word: Contact with sources of ignition prohibited

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; Chemical Control Act
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 : **9/20/2022**

Section 16. Other information

C. Version : 1

Prepared by : EHS

D. Other

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.