SAFETY DATA SHEET



Date of issue/Date of revision 9 August 2022 Version 9.03

Section 1. Identification		
Product code	: 00136773	
Product name	: SIGMARINE 24 YELLOW	
Product type	: Liquid.	
Relevant identified uses o	f the substance or mixture and uses advised against	
Product use	Coating. Professional applications, Used by spraying.	
Supplier's details	: PPG Industries (Singapore) Pte. Ltd., No. 1 Tuas Basin Close, Singapore 638803. Tel +65 68653737	
Emergency telephone number (with hours of operation)	: CHEMTREC +(65)-31581349 (CCN 17704)	

Section 2. Hazards identification

Classification of the	: FLAMMABLE LIQUIDS - Category 3
substance or mixture	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
	AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements, including precautionary statements

Hazard pictograms	
Signal word	: Danger
Hazard statements	 Flammable liquid and vapor. Causes damage to organs through prolonged or repeated exposure. (central nervous system (CNS)) Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product.
Response	: Collect spillage. Get medical advice or attention if you feel unwell.
Storage	: Store in a well-ventilated place. Keep cool.
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Section 2. Hazards identification

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

result in classification

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

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

CAS number/other identifiers

CAS number	: Not applicable.
EC number	: Mixture.

Ingredient name	%	CAS number
Maphtha (petroleum), hydrodesulfurized heavy	10 - <20	64742-82-1
Naphtha (petroleum), hydrotreated heavy	5 - <10	64742-48-9
nonane	1 - <3	111-84-2
calcium bis(2-ethylhexanoate)	0.3 - <1	136-51-6
2-ethylhexanoic acid, zirconium salt	0.1 - <0.3	22464-99-9
N,N'-ethane-1,2-diylbis(12-hydroxyoctadecan-1-amide)	0.1 - <0.3	123-26-2

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

Description of necessary first aid measures

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.
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.
Skin contact	1	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion	:	If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects	
Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	Defatting to the skin. May cause skin dryness and irritation.
Ingestion	No known significant effects or critical hazards.
Over-exposure signs/sympto	

Over-exposure signs/symptoms

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Section 4. First aid measures

Eye contact	: No specific data.		
Inhalation	: No specific data.		
Skin contact	: Adverse symptoms may include the following: irritation dryness cracking		
Ingestion	: No specific data.		
Indication of immediate medical attention and special treatment needed, if necessary			
Notes to physician	 Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. 		
Specific treatments	: No specific treatment.		
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.		

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: Do not use water jet.
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 metal oxide/oxides
Special protective actions for fire-fighters	: 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.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	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.
For emergency responders	:	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
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.
Methods and materials for co	nta	ainment 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

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.

Section 7. Handling and storage

		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.
Advice on general occupational hygiene	:	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. See also Section 8 for additional information on hygiene measures.
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. 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

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
ronane	Workplace Safety and Health Act
	(Singapore, 2/2006).
	PEL (long term): 1050 mg/m ³ 8 hours.
	PEL (long term): 200 ppm 8 hours.
2-ethylhexanoic acid, zirconium salt	Workplace Safety and Health Act
	(Singapore, 2/2006). [Zirconium and
	compounds]
	PEL (short term): 10 mg/m ³ , (Zr) 15
	minutes.
	PEL (long term): 5 mg/m ³ , (Zr) 8 hours.
N,N'-ethane-1,2-diylbis(12-hydroxyoctadecan-1-amide)	ACGIH TLV (United States).
· · · · · · · · · · · · · · · · · · ·	TWA: 3 mg/m ³ Form: Respirable
	TWA: 10 mg/m ³ Form: Total dust

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.

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Section 8. Exposure controls/personal protection

Appropriate engineering	:	Use only with adequate ventilation. Use process enclosures, local exhaust
controls		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.
Individual protection meas	ures	
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.
Eye/face protection	:	Safety glasses with side shields.
Skin protection		
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: 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.
Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
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.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Yellow.
Odor	: Aromatic.
рН	insoluble in water.
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 40°C (104°F)
Evaporation rate	: 0.415 (nonane) compared with butyl acetate
Flammability (solid, gas)	: liquid
Vapor pressure	 Highest known value: 0.5 kPa (3.8 mm Hg) (at 20°C) (Naphtha (petroleum), hydrodesulfurized heavy). Weighted average: 0.4 kPa (3 mm Hg) (at 20°C)
Vapor density	: Highest known value: 4.4 (Air = 1) (nonane).
Relative density	: 1.42
Solubility	: Insoluble in the following materials: cold water.
Auto-ignition temperature	: Lowest known value: 205°C (401°F) (nonane).
Viscosity	: Kinematic (40°C (104°F)): >21 mm²/s (>21 cSt)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredien	its.
Chemical stability	: The product is stable.	
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.	
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products.	
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.	
Hazardous decomposition products	: Depending on conditions, decomposition products may include the following materials: carbon oxides metal oxide/oxides	

Section 11. Toxicological information

Information on toxicological effects Acute toxicity

Section 11. Toxicological information

LD50 Oral	Rat	>5000 mg/kg	-
LD50 Dermal	Rabbit	>5000 mg/kg	-
LD50 Oral	Rat	>6 g/kg	-
LC50 Inhalation Gas.	Rat	3200 ppm	4 hours
LC50 Inhalation Vapor	Rat	16790 mg/m ³	4 hours
LD50 Dermal	Rabbit	>5 g/kg	-
LD50 Oral	Rat	>5 g/kg	-
LC50 Inhalation Dusts and mists	Rat	>5.11 mg/l	4 hours
LD50 Dermal	Rat	>2000 mg/kg	-
LD50 Oral	Rat	>2000 mg/kg	-
There are no data available on the	mixture itself.		
	LD50 Oral LC50 Inhalation Gas. LC50 Inhalation Vapor LD50 Dermal LD50 Oral LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	LD50 OralRatLC50 Inhalation Gas.RatLC50 Inhalation VaporRatLD50 DermalRatLD50 OralRatLC50 Inhalation Dusts and mistsRatLD50 DermalRatLD50 DermalRatLD50 DermalRatLD50 DermalRat	LD50 Oral LC50 Inhalation Gas. LC50 Inhalation Vapor LD50 DermalRat Rat Rat Rat Rabbit>6 g/kg 3200 ppm 16790 mg/m³ >5 g/kgLD50 Oral LC50 Inhalation Dusts and mistsRat Rat Rat>5 g/kgLD50 DermalRat Rat>5 g/kgLD50 DermalRat Rat>5 g/kgLD50 DermalRat>2000 mg/kg

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.
<u>Mutagenicity</u>	
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	
0	: There are no data available on the mixture itself.
Conclusion/Summary	
Teratogenicity	
	: There are no data available on the mixture itself.

NameCategoryRoute of
exposureTarget organsNaphtha (petroleum), hydrodesulfurized heavy
Naphtha (petroleum), hydrotreated heavyCategory 3
Category 3
Category 3-Narcotic effects
Respiratory tract
irritation
Narcotic effectsnonaneCategory 3
Category 3-Narcotic effects
Respiratory tract
irritation
Narcotic effects

Specific target organ toxicity (repeated exposure)

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Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Naphtha (petroleum), hydrodesulfurized heavy	Category 1	-	central nervous system (CNS)

Aspiration hazard

Name	Result
Naphtha (petroleum), hydrotreated heavy	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information	on the likely	: Not available.

routes of exposure

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Defatting to the skin. May cause skin dryness and irritation.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

	No specific data.No specific data.
Skin contact	Adverse symptoms may include the following: irritation dryness cracking
Ingestion	: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Long term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	<u>ects</u>
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	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.

Section 11. Toxicological information

Reproductive toxicity

: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (gases)	143598.33 ppm
Inhalation (vapors)	753.44 mg/l

Other 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.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2-ethylhexanoic acid, zirconium salt	Acute LC50 >100 mg/l	Fish	96 hours
N,N'-ethane-1,2-diylbis (12-hydroxyoctadecan- 1-amide)	Acute EC50 29 to 43 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 94 mg/l	Daphnia - Daphnia magna	48 hours

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
₩,N'-ethane-1,2-diylbis (12-hydroxyoctadecan- 1-amide)	-	63 % - 28 days	-	-

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

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
₩,N'-ethane-1,2-diylbis (12-hydroxyoctadecan- 1-amide)	-	-	Readily

Bioaccumulative potential

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Section 12. Ecological information

Product/ingredient name	LogPow	BCF	Potential
N,N'-ethane-1,2-diylbis (12-hydroxyoctadecan- 1-amide)	5.65 >6	-	high high

Mobility in soil

Soil/water partition	: Not available.
coefficient (Koc)	

Other adverse effects

: No known significant effects or critical hazards.

Section 13. Disposal considerations

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. 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	ΙΑΤΑ
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3	3	3
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.
Marine pollutant substances	Not applicable.	(Naphtha (petroleum), hydrodesulfurized heavy, nonane)	Not applicable.

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

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.

Transport in bulk according : Not applicable. to IMO instruments

Section 15. Regulatory information

Singapore - hazardous chemicals under government control

None.

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Section 16. Other information

<u>History</u>	
Date of issue/Date of revision	: 9 August 2022
Date of previous issue	: 8/12/2021
Version	: 9.03
Prepared by	: EHS
Key to abbreviations	 ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Internediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

V Indicates information that has changed from previously issued version.

Notice to reader

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Section 16. Other information

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.