SAFETY DATA SHEET



The information in this Safety Data Sheet is required pursuant to GHS UN rev. 7

Date of issue/Date of revision 20 January 2023

Version 3

Section 1. Identification

Product code : 000001019148

Product name : SIGMALINE 2000 HARDENER

Product type : Liquid.

Other means of identification

00250296

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

Product use : Coating

Professional applications, Used by spraying.

Uses advised against: Product is not intended, labelled or packaged for consumer use.

Supplier's information: PPG Asian Paints Private Limited

6A Shanti Nagar Santa Cruz (East) Mumbai - 400055

India

Emergency telephone

number:

: +91 22 6815 8700

Section 2. Hazards identification

Classification of the substance or mixture

: FLAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 3
ACUTE TOXICITY (inhalation) - Category 3
SKIN CORROSION/IRRITATION - Category 1A
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1

SKIN SENSITISATION - Category 1

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal

toxicity: 3.5%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 14.3%

GHS label elements

Hazard pictograms









Signal word : Danger

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Product name SIGMALINE 2000 HARDENER

Section 2. Hazards identification

Hazard statements

: Combustible liquid.

Harmful if swallowed.

Toxic in contact with skin or if inhaled. Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

: Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response

Collect spillage. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage

: Store locked up.

Disposal

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

Other hazards which do not : None known. result in classification

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

CAS number/other identifiers

CAS number Not applicable.

Ingredient name	%	CAS number
2/2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	50 - 100	6864-37-5
benzyl alcohol	10 - <20	100-51-6
N-(3-(trimethoxysilyl)propyl)ethylenediamine	3 - <5	1760-24-3

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.

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Product name SIGMALINE 2000 HARDENER

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running

water for at least 15 minutes, keeping eyelids open. Seek immediate medical

attention.

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 : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and

water or use recognised skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show the 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 : Causes serious eye damage.

Inhalation : Toxic if inhaled.

Skin contact : Causes severe burns. Toxic in contact with skin. May cause an allergic skin

reaction.

: Harmful if swallowed. Ingestion

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:

> watering redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:

pain or irritation

redness

blistering may occur

: Adverse symptoms may include the following: Ingestion

stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

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.

: No specific treatment. **Specific treatments**

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. Firefighting measures

Extinguishing media

Suitable extinguishing

: Use dry chemical, CO2, water spray (fog) or foam.

Unsuitable extinguishing

media

media

: Do not use water jet.

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Product name SIGMALINE 2000 HARDENER

Section 5. Firefighting measures

Specific hazards arising from the chemical

: Combustible liquid. 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 metal oxide/oxides

metal oxide/oxide/oxide.

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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

: If specialised 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 spilt 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 material 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

Estop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the 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 spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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Product name SIGMALINE 2000 HARDENER

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). 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 breathe vapour 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. Empty containers retain product residue and can be hazardous. Do not reuse container.

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. Store locked up. Eliminate all ignition sources. Separate from oxidising 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 unlabelled 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

None.

Recommended monitoring procedures

: 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.

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, vapour 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 measures

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.

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Section 8. Exposure controls/personal protection

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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 : nitrile neoprene

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.

: Appropriate footwear and any additional skin protection measures should be Other skin protection

selected based on the task being performed and the risks involved and should be

approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a

respiratory protection program to ensure proper fitting, training, and other important

aspects of use.

Section 9. Physical and chemical properties

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

Appearance

Physical state : Liquid. Colour : Yellow.

: Aromatic. [Strong] Odour : Not available. **Odour threshold Melting point/freezing point** : Not available. **Boiling point, initial boiling** : >37.78°C (>100°F)

point, and boiling range

Flammability : Not available. : Not available.

Lower and upper explosive

(flammable) limits

: Closed cup: 65°C (149°F) Flash point

Auto-ignition temperature : 275°C (527°F) **Decomposition temperature** : Not available. pН : Not applicable.

Viscosity : Kinematic (40°C): >21 mm²/s

60 - 100 s (ISO 6mm) **Viscosity**

Media Result

Solubility(ies) cold water Not soluble

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Product name SIGMALINE 2000 HARDENER

Section 9. Physical and chemical properties

Partition coefficient: n-

octanol/water

: Not applicable.

Vapour pressure

| Vapour Pressure at 20°C | Vapour pressure at 50°C | | Ingredient name | mm Hg | kPa | Method | mm Hg | kPa | Method | Hg | Method | Meth

Relative density : 0.97

Relative vapour density

Particle characteristics

: Not available.

Median particle size : Not applicable.

Evaporation rate : Not available.

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

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:

oxidising agents, strong alkalis, strong acids.

Hazardous decomposition

products

Hazardous polymerisation

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

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine)	LC50 Inhalation Dusts and mists	Rat	420 mg/m³	4 hours
benzyl alcohol	LD50 Dermal LD50 Oral LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rabbit Rat Rat Rabbit Rat	>0.2 g/kg >0.32 g/kg >4178 mg/m³ 2000 mg/kg 1.23 g/kg	- - 4 hours -
N-(3-(trimethoxysilyl)propyl) ethylenediamine	LD50 Oral	Rat	2413 mg/kg	-

Conclusion/Summary

Irritation/Corrosion

: There are no data available on the mixture itself.

Conclusion/Summary

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Product name SIGMALINE 2000 HARDENER

Section 11. Toxicological information

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.

Sensitisation

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)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Category 2	-	-

Aspiration hazard

Name	Result
benzyl alcohol	ASPIRATION HAZARD - Category 2

Information on likely routes : Not available.

of exposure

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Toxic if inhaled.

Skin contact: Causes severe burns. Toxic in contact with skin. May cause an allergic skin

reaction.

Ingestion: Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

pain watering redness

Inhalation : No specific data.

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Product name SIGMALINE 2000 HARDENER

Section 11. Toxicological information

Skin contact: Adverse symptoms may include the following:

pain or irritation

redness blistering may occur

Ingestion : Adverse symptoms may include the following:

stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate

: Not available.

effects

Potential delayed effects:

: Not available.

Long term exposure

Potential immediate

: Not available.

effects

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General: May cause damage to organs through prolonged or repeated exposure. Once

sensitized, a severe allergic reaction may occur when subsequently exposed to very

low levels.

Carcinogenicity : No known significant effects or critical hazards.
 Mutagenicity : No known significant effects or critical hazards.
 Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
⊘ ral	579.69 mg/kg
Dermal	366.47 mg/kg
Inhalation (vapours)	312.99 mg/l
Inhalation (dusts and mists)	0.58 mg/l

Other information

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 vapour/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. Contains a substance that may emit formaldehyde if stored beyond its shelf life and/or during cure at curing temperatures greater than 60C/140F.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

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Product name SIGMALINE 2000 HARDENER

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
penzyl alcohol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine)	1.8	-	low
benzyl alcohol	0.87	-	low

Mobility in soil

Soil/water partition coefficient (Koc)

: Not available.

Other adverse effects

: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

Phe generation of waste should be avoided or minimised 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
UN number	UN2922	UN2922	UN2922
UN proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S.	CORROSIVE LIQUID, TOXIC, N.O.S.	CORROSIVE LIQUID, TOXIC, N.O.S.
	(2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine))	(2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine))	(2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine))
Transport hazard class(es)	8 (6.1)	8 (6.1)	8 (6.1)
Packing group	II	II	II
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.

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Section 14. Transport information

Marine pollutant substances	Not applicable.	(2,2'-dimethyl-4,4'- methylenebis	Not applicable.
		(cyclohexylamine))	

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.

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

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Section 16. Other information

History

Date of issue/Date of : 20 January 2023

revision

Date of previous issue : 11/7/2021

Version : 3 : EHS Prepared by

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 = Intermediate 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

Procedure used to derive the classification

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Section 16. Other information

Classification	Justification
► AMMABLE LIQUIDS - Category 4	On basis of test data
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (dermal) - Category 3	Calculation method
ACUTE TOXICITY (inhalation) - Category 3	Calculation method
SKIN CORROSION/IRRITATION - Category 1A	Calculation method
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Calculation method
SKIN SENSITISATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2	Calculation method

[▼] Indicates information that has changed from previously issued version.

Notice to reader

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 us, 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.

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