Chemical Safety Data Sheet

Date of issue 22 February 2012
Version 3

Section 1. Product and company identification

Identification of the substance or mixture

Product name : SIGMASHIELD 460 HARDENER
Code : 00191642
Product use : Professional applications, Used by spraying.
Use of the substance/mixture : Coating.

Company/undertaking identification

Manufacturer : PPG Industrial Do Brasil - Tintas e Vernizes
Via Anhanguera KM 106, Bairro Sao Judas Tadeu - Sumare / SP
Emergency telephone number : 55 0800 - 111767 - Empresa SOS Cotec
General information : 5519 2103-6180 (Department Comercial) and 5519 2103-6017 (Portaria)

Section 2. Composition, information on ingredients

Substance/preparation : Preparation

Ingredient name	CAS number	%	Classification
Phenol, polymer with formaldehyde, glycidyl ether (MW<=700)	28064-14-4	20 - 25	Xi; R36/38 R43 N; R51/53
xylene	1330-20-7	15 - 20	R10 Xn; R20/21 Xi; R38
m-phenylenebis(methylamine)	1477-55-0	15 - 20	Xn; R20/22 C; R34 R43 R52/53
Propylidynetrimethanol, propoxylated, reaction products with ammonia	39423-51-3	15 - 20	Xn; R21/22 C; R34
benzyl alcohol	100-51-6	10 - 12.5	Xn; R20/22
2-methylpropan-1-ol	78-83-1	5 - 7	R10 Xi; R41, R37/38 R67
bisphenol A	80-05-7	3 - 5	Repr. Cat. 3; R62 Xi; R41, R37 R43 R52
ethylbenzene	100-41-4	3 - 5	F; R11 Xn; R20
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	2 - 3	Xn; R22 Xi; R36/38
See Section 16 for the full text of the R-phrases declared above.			

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 3 . Hazards identification

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : R10
Xn; R20/21/22
C; R34
R43
R52/53

Physical/chemical hazards : Flammable.

Human health hazards : Harmful by inhalation, in contact with skin and if swallowed. Causes burns. May cause sensitization by skin contact.

Environmental hazards : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 11 for more detailed information on health effects and symptoms.

Section 4. First aid measures

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.

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

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.

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.

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.

See Section 11 for more detailed information on health effects and symptoms.

Section 5 . Fire-fighting measures

Extinguishing media

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

Not suitable : Do not use water jet.

Special exposure hazards : Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

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. This material is harmful to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides

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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Section 6. Accidental release measures

Personal precautions : 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

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.

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). Use spark-proof tools and explosion-proof equipment. 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.

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

Section 7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. 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. 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 vapor or mist. Do not ingest. 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 non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : 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. Do not store above the following temperature: 120F / 49C. 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.

Packaging materials

Recommended : Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Section 8 . Exposure controls/personal protection

Exposure limit values

Ingredient name	Occupational exposure limits
xylene	**Ministério do Trabalho e Emprego (Brazil, 11/2001).** LT: 340 mg/m³ 8 hour(s). LT: 78 ppm 8 hour(s).
m-phenylenebis(methylamine)	**ACGIH TLV (United States, 2/2010). Absorbed through skin.** C: 0.1 mg/m³
2-methylpropan-1-ol	**Ministério do Trabalho e Emprego (Brazil, 11/2001).** LT: 115 mg/m³ 8 hour(s). LT: 40 ppm 8 hour(s).
ethylbenzene	**Ministério do Trabalho e Emprego (Brazil, 11/2001).** LT: 340 mg/m³ 8 hour(s). LT: 78 ppm 8 hour(s).

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.

Exposure controls

Occupational exposure 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.

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.

Respiratory protection : 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. 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.

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.

Gloves : nitrile, neoprene

Eye protection : Chemical splash goggles. and face shield

Skin 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.

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.

Section 9 . Physical and chemical properties

Physical state : Liquid.

Color : Various

Odor : Amine-like.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: 31°C (87.8°F)

Explosion limits : Lower: 1.13% Upper: 8.75%

Section 9 . Physical and chemical properties

Vapor pressure : Highest known value: 1.2 kPa (9 mm Hg) (at 20°C) (2-methylpropan-1-ol). Weighted average: 0.4 kPa (3 mm Hg) (at 20°C)

Specific gravity : 1

Solubility : Insoluble in the following materials: cold water.

Vapor density : Highest known value: 3.7 (Air = 1) (xylene). Weighted average: 3.53 (Air = 1)

Auto-ignition temperature : 305°C (581°F)

Section 10. Stability and reactivity

Stability : Stable under recommended storage and handling conditions (see section 7).

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Materials to avoid : Reactive or incompatible with the following materials: oxidizing materials strong acids strong alkalis

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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

Section 11. Toxicological information

Potential acute health effects

Inhalation : Harmful by inhalation. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Skin contact : Corrosive to the skin. Causes burns. Harmful in contact with skin. May cause sensitization by skin contact.

Eye contact : Corrosive to eyes. Causes burns.

Potential chronic health effects

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental toxicity	Impairs fertility
bisphenol A				Repr. Cat. 3; R62

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : Adverse symptoms may include the following:
stomach pains

Skin : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Eyes : Adverse symptoms may include the following:
pain
watering
redness

Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Inhalation of high concentrations of vapor may affect the central nervous system.

Target organs : Contains material which causes damage to the following organs: blood, kidneys, liver, heart, brain, central nervous system (CNS).
Contains material which may cause damage to the following organs: the nervous system, mucous membranes, gastrointestinal tract, upper respiratory tract, skin, ears, eye, lens or cornea.

Section 12. Ecological information

Environmental effects : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure

Other ecological information

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
xylene	3.16	-	high
m-phenylenebis(methylamine)	0.18	2.691534803	low
benzyl alcohol	1.1	-	low
2-methylpropan-1-ol	0.76	-	low
bisphenol A	3.32	43.651583224	low
ethylbenzene	3.15	-	high

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

Section 13. Disposal considerations

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

Section 14. Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	3469	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	3 (8)	III	-
IMDG	3469	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	3 (8)	III	-
IATA	3469	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	3 (8)	III	-

PG* : Packing group

Section 15. Regulatory information

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Classification : Corrosive

Section 15. Regulatory information

Risk phrases : R10- Flammable.
R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
R34- Causes burns.
R43- May cause sensitization by skin contact.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S23- Do not breathe vapor or spray.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S38- In case of insufficient ventilation, wear suitable respiratory equipment.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Section 16. Other information

Full text of R-phrases referred to in sections 2 and 3 - Europe : R11- Highly flammable.
R10- Flammable.
R62- Possible risk of impaired fertility.
R20- Harmful by inhalation.
R22- Harmful if swallowed.
R20/21- Harmful by inhalation and in contact with skin.
R20/22- Harmful by inhalation and if swallowed.
R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
R21/22- Harmful in contact with skin and if swallowed.
R34- Causes burns.
R41- Risk of serious damage to eyes.
R37- Irritating to respiratory system.
R38- Irritating to skin.
R36/38- Irritating to eyes and skin.
R37/38- Irritating to respiratory system and skin.
R43- May cause sensitization by skin contact.
R67- Vapors may cause drowsiness and dizziness.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52- Harmful to aquatic organisms.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred to in sections 2 and 3 - Europe : F - Highly flammable
Repr. Cat. 3 - Toxic to reproduction category 3
C - Corrosive
Xn - Harmful
Xi - Irritant
N - Dangerous for the environment

History

Date of issue : **2/22/2012.**

Version : **3**

Organization that prepared the MSDS : EHS

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.