

SAFETY DATA SHEET



Conforms to Official Mexican Standard NOM-018-STPS-2015

Date of revision 24 September 2019
Version 5

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product name : K&L KL4600 KOLOR-TAR URETHANE/COAL TAR
Product code : KL4600/03
Other means of identification : Not applicable.
Product type : Liquid.

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

Product use : Industrial applications.
Use of the substance/mixture : Coating.
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 or + 52 55 5559 1588 (Mexico)

Technical Phone Number : 888-977-4762

SECTION 2: Hazards identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (dermal) - Category 5
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION (Fertility) - Category 1B
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory system) - Category 2
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity:
20.8% (Oral), 36.1% (Dermal), 30% (Inhalation)

GHS label elements

SECTION 2: Hazards identification**Hazard pictograms****Signal word**

: Danger

Hazard statements

: H226 - Flammable liquid and vapor.
 H332 - Harmful if inhaled.
 H313 - May be harmful in contact with skin.
 H319 - Causes serious eye irritation.
 H315 - Causes skin irritation.
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317 - May cause an allergic skin reaction.
 H340 - May cause genetic defects.
 H350 - May cause cancer.
 H360 - May damage fertility or the unborn child.
 H335 - May cause respiratory irritation.
 H373 - May cause damage to organs through prolonged or repeated exposure. (respiratory system)

Precautionary statements**Prevention**

: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection. P284 - Wear respiratory protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace.

Response

: P314 - Get medical attention if you feel unwell. P308 + P313 - IF exposed or concerned: Get medical attention. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or physician. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P302 + P352 + P312 + P362 + P364 - IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.

Storage

: P405 - Store locked up.

Disposal

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification

: Sanding and grinding dusts may be harmful if inhaled. Prolonged or repeated contact may dry skin and cause irritation. 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. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Persons with a history of skin sensitization

SECTION 2: Hazards identification

problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Repeated exposure may lead to permanent respiratory disability. Moisture-sensitive material. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Emits toxic fumes when heated.

Supplemental label elements (First aid measures):

Photosensitive agents : In case of accidental eye contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation or blistering occurs after contact. In case of accidental skin contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation, rash or blistering occurs after contact.

See toxicological information (Section 11)

SECTION 3: Composition/information on ingredients

Substance/mixture	: Mixture
Product name	: K&L KL4600 KOLOR-TAR URETHANE/COAL TAR
Other means of identification	: Not applicable.

Ingredient name	%	CAS number
Xylene	≥10 - ≤20	1330-20-7
Pitch, coal tar, high-temp.	≥10 - ≤20	65996-93-2
diiron trioxide	≥10 - ≤20	1309-37-1
Talc , not containing asbestiform fibres	≥5.0 - ≤10	14807-96-6
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly[oxy(methyl-1,2-ethanediy)]	≥1.0 - ≤5.0	53862-89-8
4,4'-methylenediphenyl diisocyanate	≥1.0 - ≤3.8	101-68-8
Isocyanic acid, polymethylenepolyphenylene ester	≥1.0 - ≤5.0	9016-87-9
heptan-2-one	≥1.0 - ≤3.1	110-43-0
4-chloro-α,α,α-trifluorotoluene	≥1.0 - ≤3.1	98-56-6
ethylbenzene	<1.0	100-41-4
crystalline silica, respirable powder (<10 microns)	<1.0	14808-60-7
m-tolylidene diisocyanate	<1.0	26471-62-5

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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**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. In case of accidental eye contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation or blistering occurs after contact.
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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.
- 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. In case of accidental skin contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation, rash or blistering occurs after contact.
- 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** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : May be harmful in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

See toxicological information (Section 11)

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.
- 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.

SECTION 5: Firefighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, 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.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
halogenated compounds
carbonyl halides
metal oxide/oxides
Cyanate and isocyanate.
hydrogen cyanide

SECTION 5: Firefighting measures

- 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).

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.
- Special provisions** : 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). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

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 or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. 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. 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.

Special precautions

: Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

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

: Storage temperature: 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.
Precautions should be taken to minimize exposure to atmospheric humidity or water. CO₂ will be formed, which, in closed containers, could result in pressurization.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
xylene	NOM-010-STPS-2014 (Mexico, 4/2016). STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.
Pitch, coal tar, high-temp.	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 0.2 mg/m ³ , (as soluble aerosol in Benzene) 8 hours. Form: soluble aerosol
diiron trioxide	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction
Talc , not containing asbestiform fibres	NOM-010-STPS-2014 (Mexico, 4/2016).

SECTION 8: Exposure controls/personal protection

Isocyanic acid, polymethylenepolyphenylene ester, polymer with .
alpha.-hydro-.omega.-hydroxypoly[oxy(methyl-1,2-ethanediy)]
4,4'-methylenediphenyl diisocyanate

Isocyanic acid, polymethylenepolyphenylene ester
heptan-2-one

4-chloro- α,α,α -trifluorotoluene

ethylbenzene

crystalline silica, respirable powder (<10 microns)

m-tolyldiene diisocyanate

STEL: 2 mg/m³ 15 minutes. Form:
Respirable
None.

NOM-010-STPS-2014 (Mexico, 4/2016).

TWA: 0.005 ppm 8 hours.

None.

NOM-010-STPS-2014 (Mexico, 4/2016).

TWA: 50 ppm 8 hours.

IPEL (PPG).

TWA: 25 ppm

NOM-010-STPS-2014 (Mexico, 4/2016).

TWA: 20 ppm 8 hours.

NOM-010-STPS-2014 (Mexico, 4/2016).

TWA: 0.025 mg/m³ 8 hours. Form:

Respirable

None.

Key to abbreviations

C = Ceiling Limit

IPEL = Internal Permissible Exposure Limit

STEL = Short term exposure limit

TLV = Threshold Limit Value

TWA = Time Weighted Average

Consult local authorities for acceptable exposure limits.

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.

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.

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.

Eye/face protection : Chemical splash goggles.

Skin protection

SECTION 8: Exposure controls/personal 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	: butyl rubber
Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. 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	: By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask. 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.
Restrictions on use	: Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

SECTION 9: Physical and chemical properties**Appearance**

Physical state	: Liquid.
Color	: Black.
Odor	: Characteristic.
Odor threshold	: Not available.
Molecular weight	: Not applicable.
pH	: Not available.
Melting point	: Not available.
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 30°C (86°F)
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Evaporation rate	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.6
Density (lbs / gal)	: 13.35
Solubility	: Insoluble in the following materials: cold water.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not available.

SECTION 9: Physical and chemical properties

Viscosity	: Kinematic (40°C (104°F)): >0.21 cm ² /s (>21 cSt)
Volatility	: 38% (v/v), 21.17% (w/w)
% Solid. (w/w)	: 78.83

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	: In a fire, hazardous decomposition products may be produced. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.
Hazardous decomposition products	: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

SECTION 11: Toxicological information**Information on toxicological effects****Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
Xylene	LD50 Dermal	Rabbit	>1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
Pitch, coal tar, high-temp.	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3300 mg/kg	-
diiron trioxide	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
	LD50 Oral	Rat	10 g/kg	-
4,4'-methylenediphenyl diisocyanate	LD50 Oral	Rat	9200 mg/kg	-
	LD50 Dermal	Rabbit	>9400 mg/kg	-
Isocyanic acid, polymethylenepolyphenylene ester	LD50 Oral	Rat	49 g/kg	-
	LC50 Inhalation Vapor	Rat	16.7 mg/l	4 hours
heptan-2-one	LD50 Dermal	Rabbit	10.206 g/kg	-
	LD50 Oral	Rat	1.6 g/kg	-
4-chloro- α,α,α -trifluorotoluene	LC50 Inhalation Vapor	Rat	33080 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>2.7 g/kg	-
ethylbenzene	LD50 Oral	Rat	13 g/kg	-
	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
LD50 Dermal	Rabbit	17.8 g/kg	-	
	LD50 Oral	Rat	3.5 g/kg	-
m-tolylidene diisocyanate	LC50 Inhalation Vapor	Rat	0.48 mg/l	1 hours
	LD50 Dermal	Rabbit	>9440 mg/kg	-
LD50 Oral	Rat	5.8 g/kg	-	

SECTION 11: Toxicological information

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

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
4,4'-methylenediphenyl diisocyanate	Skin - Irritant	Rabbit	-	-	-

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

Product/ingredient name	Route of exposure	Species	Result
4,4'-methylenediphenyl diisocyanate	skin	Mouse	Sensitizing
	Respiratory	Guinea pig	Sensitizing

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

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-methylenediphenyl diisocyanate	Positive - Inhalation - TC	Rat	0 to 6 mg/m ³	2 years; 5 days per week

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

Classification

Product/ingredient name	OSHA	IARC	NTP
Xylene	-	3	-
Pitch, coal tar, high-temp.	-	1	-
diiron trioxide	-	3	-
4,4'-methylenediphenyl diisocyanate	-	3	-
Isocyanic acid, polymethylenepolyphenylene ester	-	3	-
ethylbenzene	-	2B	-
crystalline silica, respirable powder (<10 microns)	-	1	Known to be a human carcinogen.
m-tolylidene diisocyanate	-	2B	Reasonably anticipated to be a human carcinogen.

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

Reproductive toxicity

SECTION 11: Toxicological information

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	Category	Route of exposure	Target organs
Xylene	Category 3	Not applicable.	Respiratory tract irritation
Talc , not containing asbestiform fibres	Category 3	Not applicable.	Respiratory tract irritation
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly[oxy (methyl-1,2-ethanediyl)]	Category 3	Not applicable.	Respiratory tract irritation
4,4'-methylenediphenyl diisocyanate	Category 3	Not applicable.	Respiratory tract irritation
Isocyanic acid, polymethylenepolyphenylene ester	Category 3	Not applicable.	Respiratory tract irritation
heptan-2-one	Category 3	Not applicable.	Narcotic effects
4-chloro- α,α,α -trifluorotoluene	Category 3	Not applicable.	Respiratory tract irritation
m-tolylidene diisocyanate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly[oxy (methyl-1,2-ethanediyl)]	Category 2	Inhalation	Not determined
4,4'-methylenediphenyl diisocyanate	Category 2	Inhalation	respiratory system
Isocyanic acid, polymethylenepolyphenylene ester	Category 2	Inhalation	Not determined
ethylbenzene	Category 2	Not determined	hearing organs
crystalline silica, respirable powder (<10 microns)	Category 1	Inhalation	Not determined

Target organs : Contains material which causes damage to the following organs: brain, central nervous system (CNS).
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, liver, bladder, peripheral nervous system, cardiovascular system, upper respiratory tract, skin, eye, lens or cornea.

Aspiration hazard

Name	Result
Xylene heptan-2-one ethylbenzene	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 2 ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure**Potential acute health effects**

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : May be harmful in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

SECTION 11: Toxicological information

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Conclusion/Summary : There are no data available on the mixture itself. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Repeated exposure may lead to permanent respiratory disability. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

SECTION 11: Toxicological information

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

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

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

Mutagenicity : May cause genetic defects.

Teratogenicity : May damage the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : May damage fertility.

Numerical measures of toxicity**Acute toxicity estimates**

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
K&L KL4600 KOLOR-TAR URETHANE/COAL TAR	8540.9	4183.7	N/A	31.1	4.5
xylene	4300	1100	N/A	11	1.5
Pitch, coal tar, high-temp.	3300	N/A	N/A	N/A	N/A
diiron trioxide	10000	N/A	N/A	N/A	N/A
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly[oxy (methyl-1,2-ethanediyl)]	N/A	N/A	N/A	11	1.5
4,4'-methylenediphenyl diisocyanate	9200	N/A	N/A	11	N/A
Isocyanic acid, polymethylenepolyphenylene ester	49000	N/A	N/A	N/A	1.5
heptan-2-one	1600	10206	N/A	16.7	N/A
4-chloro- α,α,α -trifluorotoluene	13000	2500	N/A	33.08	N/A
ethylbenzene	3500	17800	N/A	17.8	1.5
m-tolylidene diisocyanate	5800	N/A	N/A	0.24	N/A

SECTION 12: Ecological information**Toxicity**

Product/ingredient name	Result	Species	Exposure
diiron trioxide	Acute EC50 >100 mg/l	Daphnia	48 hours
heptan-2-one	Acute LC50 131 mg/l	Fish	96 hours
ethylbenzene	Acute LC50 150 to 200 mg/l Fresh water	Fish	96 hours
m-tolylidene diisocyanate	Acute EC50 12.5 mg/l	Daphnia	48 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
heptan-2-one	OECD 310	69 % - Readily - 28 days	-	-

SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
heptan-2-one	-	-	Readily
ethylbenzene	-	-	Readily
m-tolylidene diisocyanate	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
xylene	3.16	7.4 to 18.5	low
Pitch, coal tar, high-temp.	6.04	-	high
heptan-2-one	1.98	-	low
ethylbenzene	3.15	79.43	low

Mobility in soil

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

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.

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

	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3	3	3

SECTION 14: Transport information

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.	(Pitch, coal tar, high-temp.)	Not applicable.
Product RQ (lbs)	Not applicable.	Not applicable.	Not applicable.
RQ substances	Not applicable.	Not applicable.	Not applicable.

Additional information**Mexico** : 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.

SECTION 15: Regulatory information**Mexico****Classification****Flammability** : 3 **Health** : 3 **Reactivity** : 0**International regulations****Montreal Protocol**

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

SECTION 16: Other information**Hazardous Material Information System (U.S.A.)****Health** : 3 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

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The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Date of previous issue : 8/9/2019

SECTION 16: Other information

Organization that prepared the MSDS : 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 = 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)
N/A = Not available
SGG = Segregation Group
UN = United Nations

✔ Indicates information that has changed from previously issued version.

Notice to reader

The information, which is based on the current knowledge of the chemical substance or mixture and applies to appropriate safety precautions for the product, is deemed correct but is not exhaustive and will be used only as a guide.

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.