

Material Safety Data Sheet



1. Identification of the material and supplier

Names

Product name : Sika Firerate PU
ADG : Flammable liquid, n.o.s

Supplier

Supplier/Manufacturer : Sika Australia Pty. Ltd.
55 Elizabeth Street
(Locked Bag 482 BDC)
Wetherill Park, NSW 2164
Australia

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Emergency telephone number : +61 1800 033 111

Use of the substance/mixture : Chemical product for construction and industry

2. Hazards identification

Classification : R10
Repr. Cat. 2; R61
Repr. Cat. 3; R62
Xn; R20
R42
N; R51/53

Risk phrases : R10- Flammable.
R61- May cause harm to the unborn child.
R62- Possible risk of impaired fertility.
R20- Also harmful by inhalation.
R42- May cause sensitisation by inhalation.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S53- Avoid exposure - obtain special instructions before use.
S23- Do not breathe gas/fumes/vapour/spray.
S36/37- Wear suitable protective clothing and gloves.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

Statement of hazardous/dangerous nature : HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on ingredients

Mixture : Yes.

BBP	85-68-7	10 - <30
toluene	108-88-3	1 - <10
m-tolylidene diisocyanate	26471-62-5	0.1 - <1

Other ingredients, determined not to be hazardous according to Safe Work Australia criteria, and not dangerous according to the ADG Code, make up the product concentration to 100%.

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.

4 . First-aid measures

First-aid measures

- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In the event of any complaints or symptoms, avoid further exposure.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- 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.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Extinguishing media

- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : 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 toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- 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.
- 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.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- 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.

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 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 (see Section 8).
- 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.
- Large spill** : Stop leak if without risk. Move containers from spill area. 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). 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 spilt 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. Alternatively, or if water-insoluble, 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.

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). 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 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 get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Refer to special instructions/safety data sheet. 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 non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing 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. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Occupational exposure limits

Ingredient name

BBP

toluene

Exposure limits

EH40/2005 WELs (United Kingdom (UK), 8/2007).

TWA: 5 mg/m³ 8 hour(s).

Safe Work Australia (Australia, 8/2005). Absorbed through skin.

STEL: 574 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 191 mg/m³ 8 hour(s).

TWA: 50 ppm 8 hour(s).

8 . Exposure controls/personal protection

m-tolylidene diisocyanate

Safe Work Australia (Australia, 8/2005). Skin sensitiser.STEL: 0.07 mg/m³ 15 minute(s).TWA: 0.02 mg/m³ 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**
- Engineering measures** : 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.
- 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.
- Eyes** : 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 or dusts.
- Hands** : 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.
- Respiratory** : 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.
- Skin** : 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.

9 . Physical and chemical properties

- Physical state** : Liquid. [Viscous liquid.]
- Colour** : Grey.
- Odour** : Faint odour. Hydrocarbon.
- Density** : 1.56 g/cm³ [25°C (77°F)]
- Flash point** : Closed cup: 44°C (111.2°F)
- Solubility** : Insoluble in the following materials: cold water.

10 . Stability and reactivity

- Stability** : The product is stable.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Avoid release to the environment. Refer to special instructions/safety data sheet.
- Materials to avoid** : Reactive or incompatible with the following materials:
oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Potential acute health effects

- Inhalation** : Harmful by inhalation. May cause sensitisation by inhalation.
Ingestion : No known significant effects or critical hazards.
Skin contact : May cause skin irritation.
Eye contact : May cause eye irritation.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	
BBP	LD Oral	Mouse	2.3 g/kg	-	
	LD50 Dermal	Rabbit	>10 g/kg	-	
	LD50 Dermal	Rat	6700 mg/kg	-	
	LD50 Dermal	Mouse	6700 mg/kg	-	
	LD50	Mouse	3160 mg/kg	-	
	Intraperitoneal				
	LD50 Oral	Mouse	>4170 mg/kg	-	
	LD50 Oral	Rat	2330 mg/kg	-	
	LD50 Unreported	Mouse	13700 ug/kg	-	
	TDL _o Oral	Mouse	1124 mg/kg	-	
	Toluene	LD50 Dermal	Rabbit	14100 uL/kg	-
		LD50	Rat	1332 mg/kg	-
		Intraperitoneal			
		LD50	Mouse	59 mg/kg	-
		Intraperitoneal			
		LD50	Rat	1960 mg/kg	-
		Intravenous			
LD50 Oral		Rat	636 mg/kg	-	
LD50		Mouse	2250 mg/kg	-	
Subcutaneous					
LD50 Unreported		Mouse	2 g/kg	-	
LD50 Unreported		Rat	6900 mg/kg	-	
LDLo		Rat	2.5 mL/kg	-	
Intraperitoneal					
LDLo		Rabbit	130 mg/kg	-	
Intravenous					
TDL _o		Rat	1 g/kg	-	
Intraperitoneal					
TDL _o	Rat	900 mg/kg	-		
Intraperitoneal					
TDL _o	Rat	750 mg/kg	-		
Intraperitoneal					
TDL _o	Rat	600 mg/kg	-		
Intraperitoneal					
TDL _o	Mouse	250 mg/kg	-		
Intraperitoneal					
TDL _o Oral	Mouse	2000 mg/kg	-		
TDL _o Oral	Rat	800 mg/kg	-		
TDL _o Oral	Rabbit	500 mg/kg	-		
TDL _o Oral	Rat	400 mg/kg	-		
m-tolylidene diisocyanate	LD50 Dermal	Rabbit	>10 mL/kg	-	
	LD50 Oral	Rat	4130 mg/kg	-	
	LD50 Oral	Mouse	1950 mg/kg	-	

Conclusion/Summary : Not available.

Potential chronic health effects

Chronic toxicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

11 . Toxicological information

- Chronic effects** : 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.
- Teratogenicity** : May cause birth defects.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : May impair fertility, based on animal data.

Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
- Ingestion** : No specific data.
- Skin** : No specific data.
- Eyes** : No specific data.
- Target organs** : Contains material which may cause damage to the following organs: kidneys, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, nose/sinuses.

12 . Ecological information

- Environmental effects** : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Water polluting material. May be harmful to the environment if released in large quantities.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
BBP	-	Acute EC50 1.8 mg/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute EC50 1.28 mg/L Fresh water	Daphnia - Water flea - Daphnia magna	2 days
	-	Acute EC50 >0.76 mg/L Fresh water	Daphnia - Water flea - Daphnia magna	2 days
	-	Acute EC50 >960 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute EC50 >900 ug/L Fresh water	Crustaceans - Opossum shrimp - Americamysis bahia	48 hours
	-	Acute LC50 43 to 52 mg/L Fresh water	Fish - Bluegill - Lepomis macrochirus - Young of the year - 0.32 to 1.2 g	96 hours
	-	Acute LC50 440 to 470 ppm Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus - Juvenile (Fledgling, Hatchling, Weanling) - 8 to 15 mm	96 hours
	-	Acute LC50 660 to 840 ug/L Marine water	Fish - English sole - Parophrys vetulus - Young of the year - 9.56 cm - 10.7 g	96 hours
	-	Acute LC50 550 to 640 ug/L	Fish - English sole - Parophrys	96 hours

12 . Ecological information

	Marine water	vetulus - Young of the year - 6.47 cm - 3.9 g	
-	Acute LC50 510 to 560 ug/L Marine water	Fish - Shiner perch - Cymatogaster aggregata - Juvenile (Fledgling, Hatchling, Weanling) - 3 g	96 hours
-	Acute LC50 510 to 550 ug/L Marine water	Fish - Shiner perch - Cymatogaster aggregata - Juvenile (Fledgling, Hatchling, Weanling) - 3 g	96 hours
-	Chronic NOEC 0.82 mg/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Chronic NOEC 360 ppm Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus - Juvenile (Fledgling, Hatchling, Weanling) - 8 to 15 mm	96 hours
-	Chronic NOEC 960 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Chronic NOEC <700 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Chronic NOEC 620 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Chronic NOEC 480 ug/L Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 39 to 62 mm	96 hours
-	Chronic NOEC 440 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 29 to 40 mm	96 hours
-	Chronic NOEC 360 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling) - 29 to	96 hours

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	-	Chronic NOEC 320 ug/L Fresh water	40 mm Crustaceans - Opossum shrimp - Americamysis bahia	48 hours
Toluene	-	Acute EC50 19600 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - LARVAE	48 hours
	-	Acute EC50 6880 to 9830 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate	48 hours
	-	Acute EC50 6000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	-	Acute LC50 36.2 to 44.6 mg/L Fresh water	Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 28 to 33 days	96 hours
	-	Acute LC50 17.03 to 19.05 mg/L Fresh water	Fish - Fathead minnow - Pimephales promelas - LARVAE	96 hours
	-	Acute LC50 15.53 to 17.16 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 39.2 mm - 1.26 g	96 hours
	-	Acute LC50 13 to 15 mg/L Fresh water	Fish - Bluegill - Lepomis macrochirus - Young of the year - 0.32 to 1.2 g	96 hours
	-	Acute LC50 280 to 480 ppm Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus - Juvenile (Fledgling, Hatchling, Weanling) - 8 to 15 mm	96 hours
	-	Acute LC50 15.5 ppm Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult	48 hours
	-	Acute LC50 310000 to 420000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute LC50 170000 ug/L Marine water	Crustaceans - Dungeness or edible crab - Cancer magister - Zoea	48 hours

12 . Ecological information

-	Acute LC50 97700 to 174700 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate	48 hours
-	Acute LC50 86300 to 174700 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate	48 hours
-	Acute LC50 15500 ug/L Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio	48 hours
-	Acute LC50 6780 to 7810 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g	96 hours
-	Acute LC50 6410 to 7180 ug/L Marine water	Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g	96 hours
-	Acute LC50 5800 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
-	Acute LC50 5500 ug/L Fresh water	Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - FRY - 1 g	96 hours
-	Acute LC50 7.3 ul/L Marine water	Fish - Striped bass - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) - 6 g	96 hours

Conclusion/Summary : Not available.

Other ecological information

Biodegradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Product/ingredient name

LogP_{ow}

BCF

Potential

BBP	4.77	-	high
toluene	2.69	-	low

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

13 . Disposal considerations

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14 . Transport information

ADG

UN number : UN1993
 ADG Class : 3
 Packing group : II
 Proper shipping name : Flammable liquid, n.o.s
 Label No. : 3

ADR

UN number : UN1993
 ADR Class : 3
 Classification code : F1
 Packing group : II
 Proper shipping name : Flammable liquid, n.o.s
 Label No. : 3

IMDG

UN number : UN1993
 IMDG Class : 3
 Packing group : II
 Proper shipping name : Flammable liquid, n.o.s
 Emergency schedules (EmS) : F-E, S-E
 Marine pollutant : Yes.
 Label no. : 3

IATA

UN number : UN1993
 IATA Class : 3
 Packing group : II
 Proper shipping name : Flammable liquid, n.o.s
 Label no. : 3

15 . Regulatory information

Standard for the Uniform Scheduling of Drugs and Poisons

Not regulated.

Control of Scheduled Carcinogenic Substances

Ingredient name

No listed substance

Schedule

Australia inventory (AICS) : All components are listed or exempted.

EU Classification : R10
 Repr. Cat. 2; R61
 Repr. Cat. 3; R62
 Xn; R20
 R42
 N; R51/53

16 . Other information

Person who prepared the MSDS : Validated by DeSilva on 04.05.2011.

Date of previous issue : 16.09.2010.

☑ Indicates information that has changed from previously issued version.

Disclaimer

16 . Other information

Material Safety Data Sheets are updated frequently. Please ensure that you have a current copy. MSDS may be obtained from the following website: www.sika.com.au

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply. Please consult the product data sheet prior to any use and processing.