Material Safety Data Sheet

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LIC43 2K POLYURETHANE LOW GLOSS BINDER

1 . Identification of the material and supplier

Product name : LIC43 2K POLYURETHANE LOW GLOSS BINDER

ADG : Paint (heptan-2-one)

Company Identification : De Beer Australasia Pty Ltd
Unit 11, 8 Kerta Road
Kincumber, NSW, Australia
: Phone 0243684054

Emergency telephone number **Poisons Information Centre: Australia 131 126**

Uses

Area of application : Industrial applications, Used by spraying.

Product type : Liquid.

2 . Hazards identification

Classification : R10

Risk phrases : R10- Flammable.

Safety phrases : S51- Use only in well-ventilated areas.

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

3 . Composition/information on ingredients

Mixture : Yes.

Ingredient name	CAS number	Concentration
heptan-2-one	110-43-0	5 - 12.5
n-butyl acetate	123-86-4	5 - 12.5
2-butoxyethyl acetate	112-07-2	1 - 5
xylene	1330-20-7	1 - 5
methyl propyl ketone	107-87-9	1 - 5
ethylbenzene	100-41-4	0 - 1
m-xylene	108-38-3	0 - 1
o-xylene	95-47-6	0 - 1
p-xylene	106-42-3	0 - 1
solvent naphtha (petroleum), light arom. A complex combination of hydrocarbons obtained from distillation of aromatic streams. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C8 through C10 and boiling in the range of approximately 135 °C to 210 °C (275 °F to 410 °F).	64742-95-6	0 - 1
toluene	108-88-3	0 - 1
naphtha (petroleum), hydrotreated light A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C4 through C11 and boiling in the range of approximately minus 20 °C to 190 °C (-4 °F to 374 °F).	64742-49-0	0 - 1
benzene	71-43-2	0 - 1
Ethyl acrylate	140-88-5	0 - 1

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

There are no ingredients or 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 : Move exposed person 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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.

Ingestion : 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. Get medical attention if adverse health effects persist or are severe. 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 : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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, CO_2, 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.

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 oxides
sulfur oxides
metal oxide/oxides

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. Avoid breathing 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).

6 . Accidental release measures

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.

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. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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 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. 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.

8 . Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Exposure limits
heptan-2-one	**NOHSC (Australia, 8/2005).** TWA: 233 mg/m³ 8 hour(s). TWA: 50 ppm 8 hour(s).
n-butyl acetate	**NOHSC (Australia, 8/2005).** STEL: 950 mg/m³ 15 minute(s). STEL: 200 ppm 15 minute(s). TWA: 713 mg/m³ 8 hour(s). TWA: 150 ppm 8 hour(s).
2-butoxyethyl acetate	**NOHSC (Australia, 8/2005). Skin** STEL: 333 mg/m³ 15 minute(s). STEL: 50 ppm 15 minute(s). TWA: 133 mg/m³ 8 hour(s). TWA: 20 ppm 8 hour(s).
xylene	**NOHSC (Australia, 8/2005).** STEL: 655 mg/m³, 0 times per shift, 15 minute(s). STEL: 150 ppm, 0 times per shift, 15 minute(s). TWA: 350 mg/m³, 0 times per shift, 8 hour(s). TWA: 80 ppm, 0 times per shift, 8 hour(s).
methyl propyl ketone	**NOHSC (Australia, 8/2005).**

8 . Exposure controls/personal protection

	STEL: 881 mg/m³ 15 minute(s). STEL: 250 ppm 15 minute(s). TWA: 705 mg/m³ 8 hour(s). TWA: 200 ppm 8 hour(s).
ethylbenzene	**NOHSC (Australia, 8/2005).** STEL: 543 mg/m³ 15 minute(s). STEL: 125 ppm 15 minute(s). TWA: 434 mg/m³ 8 hour(s). TWA: 100 ppm 8 hour(s).
m-xylene	**NOHSC (Australia, 8/2005).** STEL: 655 mg/m³ 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 350 mg/m³ 8 hour(s). TWA: 80 ppm 8 hour(s).
o-xylene	**NOHSC (Australia, 8/2005).** STEL: 655 mg/m³ 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 350 mg/m³ 8 hour(s). TWA: 80 ppm 8 hour(s).
p-xylene	**NOHSC (Australia, 8/2005).** STEL: 655 mg/m³ 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 350 mg/m³ 8 hour(s). TWA: 80 ppm 8 hour(s).
toluene	**NOHSC (Australia, 8/2005). 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).
benzene	**NOHSC (Australia, 8/2005).** TWA: 3.2 mg/m³ 8 hour(s). TWA: 1 ppm 8 hour(s).
Ethyl acrylate	**NOHSC (Australia, 8/2005).** PEAK: 20 mg/m³ 15 minute(s). PEAK: 5 ppm 15 minute(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, 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. 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, gases 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.

8 . Exposure controls/personal protection

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.

Flash point : Closed cup: 28°C (82.4°F)

Solubility : Insoluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

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

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 : No known significant effects or critical hazards.

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
heptan-2-one	LD50 Intraperitoneal	Rat	800 mg/kg	-
	LD50 Oral	Rat	1670 mg/kg	-
n-butyl acetate	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-
2-butoxyethyl acetate	LD50 Oral	Rat	2400 mg/kg	-
xylene	LD50 Dermal	Rabbit	>1700 mg/kg	-
	LD50 Intraperitoneal	Rat	2459 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Subcutaneous	Rat	1700 mg/kg	-
methyl propyl ketone	LD50 Intraperitoneal	Rat	800 mg/kg	-
	LD50 Oral	Rat	1600 mg/kg	-
ethylbenzene	LD50 Oral	Rat	3500 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
	TDLo Intraperitoneal	Rat	1062 mg/kg	-
m-xylene	LD50 Oral	Rat	4988 mg/kg	-
o-xylene	LD50 Oral	Rat	3567 mg/kg	-
	LDLo Oral	Rat	5 gm/kg	-
p-xylene	LD50 Intraperitoneal	Rat	3810 mg/kg	-
	LD50 Oral	Rat	3910 mg/kg	-
solvent naphtha (petroleum), light arom. A complex combination of hydrocarbons obtained from distillation of aromatic	LD50 Oral	Rat	8400 mg/kg	-

11 . Toxicological information

streams. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C8 through C10 and boiling in the range of approximately 135 °C to 210 °C (275 °F to 410 °F).

toluene	LD50 Intraperitoneal	Rat	1332 mg/kg	-
	LD50 Intravenous	Rat	1960 mg/kg	-
	LD50 Oral	Rat	636 mg/kg	-
	LD50 Unreported	Rat	6900 mg/kg	-
	LDLo Intraperitoneal	Rat	2.5 mL/kg	-
	TDLo Intraperitoneal	Rat	600 mg/kg	-
benzene	LD50 Intraperitoneal	Rat	1100 ug/kg	-
	LD50 Oral	Rat	930 mg/kg	-
	LD50 Oral	Rat	1 mL/kg	-
	LD50 Oral	Rat	1800 mg/kg	-
	LDLo Subcutaneous	Rat	5 mg/kg	-
ethyl acrylate	LD50 Intraperitoneal	Rat	450 mg/kg	-
	LD50 Oral	Rat	800 mg/kg	-
	LDLo Skin	Rat	1800 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.

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

Target organs : Contains material which causes damage to the following organs: blood, kidneys, liver, lymphatic system, peripheral nervous system, gastrointestinal tract, cardiovascular system, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, nose/sinuses, throat.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
heptan-2-one	Mortality	Acute LC50 131 mg/L	Fish	96 hours
n-butyl acetate	Mortality	Acute LC50 100 mg/L	Fish	96 hours
	Mortality	Acute LC50 18 mg/L	Fish	96 hours
xylene	Mortality	Acute LC50 13.4 mg/L	Fish	96 hours
	Mortality	Acute LC50 13.3 mg/L	Fish	96 hours
	Mortality	Acute LC50 12 mg/L	Fish	96 hours
	Mortality	Acute LC50 8.6 mg/L	Fish	96 hours
	Mortality	Acute LC50 8.2 mg/L	Fish	96 hours
	Mortality	Acute LC50 3.3 mg/L	Fish	96 hours
methyl propyl ketone	Mortality	Acute LC50 1240 mg/L	Fish	96 hours
ethylbenzene	Intoxication	Acute EC50 2.97 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 2.93 mg/L	Daphnia	48 hours
	Mortality	Acute LC50 4.2 mg/L	Fish	96 hours
	Mortality	Acute LC50 9.09 mg/L	Fish	96 hours
	Mortality	Acute LC50 9.6 mg/L	Fish	96 hours
m-xylene	Intoxication	Acute EC50 5 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 3.53 mg/L	Daphnia	48 hours
	Mortality	Acute LC50 8.4 mg/L	Fish	96 hours
	Mortality	Acute LC50 16 mg/L	Fish	96 hours
	Mortality	Acute LC50 12.9 mg/L	Fish	96 hours
o-xylene	Intoxication	Acute EC50 1.87 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 1.39 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 <1.39 mg/L	Daphnia	48 hours
	Mortality	Acute LC50 12 mg/L	Fish	96 hours
	Mortality	Acute LC50 8.05 mg/L	Fish	96 hours
	Mortality	Acute LC50 7.6 mg/L	Fish	96 hours
p-xylene	Intoxication	Acute EC50 5.03 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 4.73 mg/L	Daphnia	48 hours
	Mortality	Acute LC50 8.8 mg/L	Fish	96 hours
	Mortality	Acute LC50 2.6	Fish	96 hours

12 . Ecological information

		mg/L		
toluene	Intoxication	Acute EC50 6.56 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 6 mg/L	Daphnia	48 hours
	Mortality	Acute LC50 6.78 mg/L	Fish	96 hours
	Mortality	Acute LC50 12.6 mg/L	Fish	96 hours
	Mortality	Acute LC50 5.8 mg/L	Fish	96 hours
benzene	Intoxication	Acute EC50 11.73 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 10 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 9.23 mg/L	Daphnia	48 hours
	Mortality	Acute LC50 9.2 mg/L	Fish	96 hours
	Mortality	Acute LC50 5.9 mg/L	Fish	96 hours
	Mortality	Acute LC50 5.3 mg/L	Fish	96 hours
ethyl acrylate	Mortality	Acute LC50 2.5 mg/L	Fish	96 hours

Conclusion/Summary : Not available.

Other ecological information

Biodegradability

Product/ingredient name	Test	Result	Dose	Inoculum
heptan-2-one	-	82.64 % - Readily - 20 days	-	-
	-	73.14 % - Readily - 5 days	-	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
heptan-2-one	-	-	Readily
toluene	-	-	Readily

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

13 . Disposal considerations

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADG	1263	Paint (heptan-2-one)	3	III		-
ADR	1263	Paint (heptan-2-one)	3	III		-

14 . Transport information

IMDG	1263	Paint (heptan-2-one)	3	III		**Emergency schedules (EmS)** 3-05
IATA	1263	Paint (heptan-2-one)	3	III		-

PG* : Packing group

15 . Regulatory information

Standard for the Uniform Scheduling of Drugs and Poisons

Ingredient name	Schedule
No listed substance	

Control of Scheduled Carcinogenic Substances

Ingredient name	Schedule
benzene	Schedule: 2. when used as a feedstock containing more than 50% of benzene by volume

Australia inventory (AICS) : **Australia inventory (AICS):** Not determined.

EU Classification : R10

HCS Classification : Flammable liquid
Carcinogen
Target organ effects

16 . Other information

Person who prepared the MSDS : Validated by Kees Koelewijn on 4/18/2007.

Date of previous issue : **No previous validation.**

Indicates information that has changed from previously issued version.

Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.