DUNLOP CARPET ADHESIVE

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

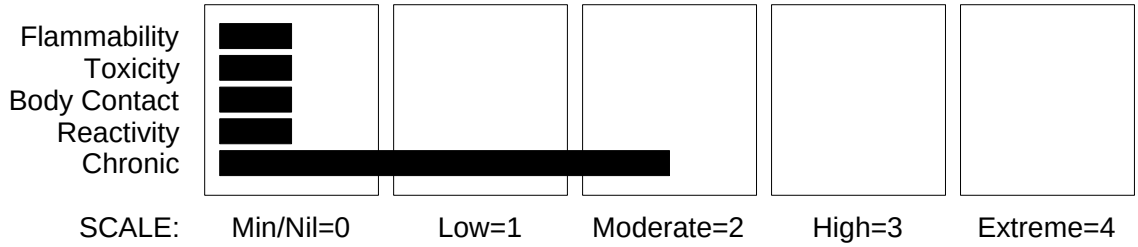
PRODUCT NAME
DUNLOP CARPET ADHESIVE

SYNONYMS

PRODUCT USE
Adhesive for installing carpet on interior subfloors.

SUPPLIER
Company: Ardex Australia Pty Ltd
Address:
20 Powers Road
Seven Hills
NSW, 2147
AUS
Telephone: 1800 224 070
Fax: +61 2 9838 7817

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

POISONS SCHEDULE
None

RISK
Cumulative effects may result following exposure*.
* (limited evidence).

SAFETY
Avoid contact with skin.

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Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
synthetic latex emulsion		15-25
resin		15-25
fillers		15-25
plasticiser		10-20
hydrocarbon solvent, as		3-5
toluene	108-88-3	
white spirit	8052-41-3.	1-3
water	7732-18-5	10-30

Section 4 - FIRST AID MEASURES

SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

If this product comes in contact with eyes:
- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.

Use extinguishing media suitable for surrounding area.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.

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- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD
- Non combustible.
- Not considered a significant fire risk, however containers may burn.

May emit poisonous fumes.

FIRE INCOMPATIBILITY
None known.

HAZCHEM
None

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear impervious gloves and safety goggles.
- Trowel up/scrape up.
- Place spilled material in clean, dry, sealed container.
- Flush spill area with water.

MAJOR SPILLS

Minor hazard.
- Clear area of personnel.
- Alert Fire Brigade and tell them location and nature of hazard.
- Control personal contact by using protective equipment as required.
- Prevent spillage from entering drains or water ways.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.
- Wash area and prevent runoff into drains or waterways.
- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)
The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:
water 500 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:
water 500 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

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water 500 mg/m³

The threshold concentration below which most people.
will experience no appreciable risk of health effects:
water 500 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

None known.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³
Australia Exposure Standards	Toluene	50	191	150	574		
Australia Exposure Standards	White spirits		790				

No data available: white spirit as (CAS: 8042-47-5)
No data available: water as (CAS: 7732-18-5)

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (ppm)	Revised IDLH Value (mg/m3)
Toluene	500	
Stoddard solvent		20,000

ODOUR SAFETY FACTOR (OSF)

OSF=0.042 (white spirit)
Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.
Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.
The Odour Safety Factor (OSF) is defined as:
OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm
Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

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REPRODUCTIVE HEALTH GUIDELINES

Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for reproductive no-observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits.

Ingredient	ORG	UF	Endpoint	CR	TLV Adeq
toluene	9.6 mg/m³	10	D	NA	-

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.
CR = Cancer Risk/10000; UF = Uncertainty factor:
TLV believed to be adequate to protect reproductive health:
LOD: Limit of detection
Toxic endpoints have also been identified as:
D = Developmental; R = Reproductive; TC = Transplacental carcinogen
Jankovic J., Drake F.: A Screening Method for Occupational Reproductive American Industrial Hygiene Association Journal 57: 641-649 (1996).

INGREDIENT DATA

TOLUENE:

Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin may readily exceed vapour inhalation exposure. Symptoms for skin absorption are the same as for inhalation. Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard.
Odour Threshold Value: 0.16-6.7 (detection), 1.9-69 (recognition)
NOTE: Detector tubes measuring in excess of 5 ppm, are available.
High concentrations of toluene in the air produce depression of the central nervous system (CNS) in humans. Intentional toluene exposure (glue-sniffing) at maternally-intoxicating concentration has also produced birth defects. Foetotoxicity appears at levels associated with CNS narcosis and probably occurs only in those with chronic toluene-induced kidney failure. Exposure at or below the recommended TLV-TWA is thought to prevent transient headache and irritation, to provide a measure of safety for possible disturbances to human reproduction, the prevention of reductions in cognitive responses reported amongst humans inhaling greater than 40 ppm, and the significant risks of hepatotoxic, behavioural and nervous system effects (including impaired reaction time and incoordination). Although toluene/ethanol interactions are well recognised, the degree of protection afforded by the TLV-TWA among drinkers is not known.

WHITE SPIRIT:

Low and high odour thresholds of 5.25 and 157.5 mg/m³, respectively, were considered to provide a rather useful index of odour as a warning property.
The TLV-TWA is calculated from data on the toxicities of the major ingredients and is intended to minimise the potential for irritative and narcotic effects, polyneuropathy and kidney damage produced by vapours.
The NIOSH (USA) REL-TWA of 60 ppm is the same for all refined petroleum

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solvents. NIOSH published an occupational "action level" of 350 mg/m³ for exposure to Stoddard solvent, assuming a 10-hour work shift and a 40-hour work-week. The NIOSH-REL ceiling of 1800 mg/m³ was established to protect workers from short-term effects that might produce vertigo or other adverse effects which might increase the risk of occupational accidents. Combined (gross) percutaneous absorption and inhalation exposure (at concentrations associated with nausea) are thought, by some, to be responsible for the development of frank hepatic toxicity and jaundice.

WATER:
No exposure limits set by NOHSC or ACGIH.

PERSONAL PROTECTION

EYE
- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET
Wear chemical protective gloves, eg. PVC.
Wear safety footwear or safety gumboots, eg. Rubber.

OTHER
- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

RESPIRATOR
Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	A-AUS	-
1000	50	-	A-AUS
5000	50	Airline *	-
5000	100	-	A-2
10000	100	-	A-3
	100+		Airline**

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* - Continuous Flow ** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Off-white cream with a slight odour; mixes with water.

PHYSICAL PROPERTIES

Mixes with water.

Molecular Weight: Not Applicable
Melting Range (C): Not Available
Solubility in water (g/L): Miscible
pH (1% solution): Not Available
Volatile Component (%vol): 51 approx.
Relative Vapour Density (air=1): Not Available
Lower Explosive Limit (%): Not Applicable
Autoignition Temp (C): Not Applicable
State: Non Slump Paste

Boiling Range (C): 100
Specific Gravity (water=1): 1.05
pH (as supplied): Not Available
Vapour Pressure (kPa): Not Available
Evaporation Rate: Not Available
Flash Point (C): Not Applicable
Upper Explosive Limit (%): Not Applicable
Decomposition Temp (°C): Not Available
Viscosity: Not Available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of

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the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

CHRONIC HEALTH EFFECTS

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

TOXICITY AND IRRITATION

Not available. Refer to individual constituents.
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

TOLUENE:

TOXICITY	IRRITATION
Oral (human) LDLo: 50 mg/kg	Skin (rabbit): 20 mg/24h-Moderate
Oral (rat) LD50: 636 mg/kg	Skin (rabbit): 500 mg - Moderate
Inhalation (human) TCLo: 100 ppm	Eye (rabbit): 0.87 mg - Mild
Inhalation (man) TCLo: 200 ppm	Eye (rabbit): 2 mg/24h - SEVERE
Inhalation (rat) LC50: >26700 ppm/1h	Eye (rabbit): 100 mg/30sec - Mild
Dermal (rabbit) LD50: 12124 mg/kg	

Reproductive effector in rats
The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

WHITE SPIRIT:

TOXICITY	IRRITATION
Inhalation (human) TCLo: 600 mg/m³/8h	Nil Reported
white spirit, as CAS RN 8052-41-3	
Oral (rat) LD50: >5000 mg/kg	Eye (human): 470 ppm/15m
Inhalation (rat) LC50: >5500 mg/m³/4h	Eye (rabbit): 500 mg/24h moderate

continued...

WATER:
No significant acute toxicological data identified in literature search.

Section 12 - ECOLOGICAL INFORMATION

Drinking Water Standards:
hydrocarbon total: 10 ug/l (UK max.).
DO NOT discharge into sewer or waterways.
Refer to data for ingredients, which follows:

TOLUENE:
Hazardous Air Pollutant: Yes
Fish LC50 (96hr.) (mg/l): 7.3-22.8
BCF<100: 13.2 (EELS
log Kow (Sangster 1997): 2.73
log Pow (Verschueren 1983): 2.69
BOD5: 5%
COD: 21%
ThOD: 3.13
Half-life Soil - High (hours): 528
Half-life Soil - Low (hours): 96
Half-life Air - High (hours): 104
Half-life Air - Low (hours): 10
Half-life Surface water - High (hours): 528
Half-life Surface water - Low (hours): 96
Half-life Ground water - High (hours): 672
Half-life Ground water - Low (hours): 168
Aqueous biodegradation - Aerobic - High (hours): 528
Aqueous biodegradation - Aerobic - Low (hours): 96
Aqueous biodegradation - Anaerobic - High (hours): 5040
Aqueous biodegradation - Anaerobic - Low (hours): 1344
Aqueous biodegradation - Removal secondary treatment - High (hours): 75%
Photolysis maximum light absorption - High (nano-m): 268
Photolysis maximum light absorption - Low (nano-m): 253.5
Photooxidation half-life water - High (hours): 1284
Photooxidation half-life water - Low (hours): 321
Photooxidation half-life air - High (hours): 104
Photooxidation half-life air - Low (hours): 10

DO NOT discharge into sewer or waterways.
log Kow: 2.1-3
log Koc: 1.12-2.85
Koc: 37-250
log Kom: 1.39-2.89
Half-life (hr) air: 2.4-104
Half-life (hr) H2O surface water: 5.55-528
Half-life (hr) H2O ground: 168-2628
Half-life (hr) soil: <48-240
Henry's Pa m^3 /mol: 518-694
Henry's atm m^3 /mol: 5.94E-03
BOD 5 if unstated: 0.86-2.12,5%
COD: 0.7-2.52,21-27%
ThOD: 3.13

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BCF: 1.67-380
Log BCF: 0.22-3.28

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM

None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN,IATA,IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

toluene (CAS: 108-88-3) is found on the following regulatory lists;
Australia High Volume Industrial Chemical List (HVICL)
Australia Inventory of Chemical Substances (AICS)
Australia Poisons Schedule
International Agency for Research on Cancer (IARC) Carcinogens
OECD Representative List of High Production Volume (HPV) Chemicals

white spirit (CAS: 8052-41-3) is found on the following regulatory lists;
Australia Inventory of Chemical Substances (AICS)
Australia Poisons Schedule
International Council of Chemical Associations (ICCA) - High Production Volume List
OECD Representative List of High Production Volume (HPV) Chemicals
white spirit (CAS: 8042-47-5) is found on the following regulatory lists;
Australia High Volume Industrial Chemical List (HVICL)
Australia Inventory of Chemical Substances (AICS)
OECD Representative List of High Production Volume (HPV) Chemicals

water (CAS: 7732-18-5) is found on the following regulatory lists;
Australia Inventory of Chemical Substances (AICS)
OECD Representative List of High Production Volume (HPV) Chemicals

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Section 16 - OTHER INFORMATION

Ingredients with multiple CAS Nos

Ingredient Name	Cas Nos
white spirit	8052-41-3, 8042-47-5

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