



PRODUCT BULLETIN

Introducing All Seasons Coolant

Australia

2009



All Seasons Coolant

Description

All Seasons Coolant was designed to generally exceed the broad range of national, international and OEM standards and is recommended for all general after-market servicing of commercial and automotive equipment.

All Seasons Coolant has been approved by GMHA (to the HN2217 specification) for initial fill use in all Australian manufactured four cylinder vehicles. HN2217 is the specification recommended by GMHA for all in-warranty and post-warranty servicing of locally built and imported (OPEL) 4 cylinder vehicles.

All Seasons Coolant has been approved by Ford Australia (to the ESE-M97B44-A specification) for initial fill use in their V8 and high performance 6 cylinder vehicles and generally wherever glycol based coolant is required. It is recommended by Ford for all in-warranty and post-warranty servicing of Ford vehicles where a glycol based coolant is required.

All Seasons Coolant is a superior general-purpose coolant based on Hybrid Additive Technology (HAT) which is a selectively balanced mixture of organic & inorganic additives. HAT formulations are longer life products than those based on conventional formulations and are far more robust than those built on Organic Additive Technology (OAT), making HATs the products of choice for general after-market servicing.

All Seasons Coolant has been subjected to extensive testing, including the FW test (a benchmark for European marques such as BMW and Opel). FluidMasters All Seasons Coolant offers excellent corrosion protection for all alloys used in engine components such as the radiator, engine block, cylinder head, welsh plugs and water pump.

All Seasons Coolant is suitable for engines of both ferrous and aluminium alloy construction, under both light and heavy duty cycle operation.

All Seasons Coolant is compatible with aluminium or copper/brass and mixed aluminium, copper/brass cooling circuits. High quality chemistry is used in this formulation.

All Seasons Coolant is produced as a green liquid. Bittering agents are deliberately added, at a rate of 10 ppm, to reduce the risk of accidental poisoning by ingestion.

Specifications / Standards

All Seasons Coolant is recommended for general use where the following specifications / standards are cited.

AS/NZS 2108.1:1997 Type A
BS 6580
JIS K 2234
ASTM D 3306

ASTM 4985 (heavy duty engines)
SAE J 1034
General Motors GM 1825M
General Motors GM 1899M
General Motors Holden HN 2217
Ford ESE-M97B44-4 (automotive)
Ford ESE-FM97B18-C
Caterpillar 1 EO 535 (performance)
Cummins 92 T8-9
Nissan NES 5059 LLC
GME L1301
Volvo (UK)
BMW (UK)
Saab FSD 8704
Detroit Diesel Allison 7SE298
MWN Diesel D234 2/15
Mazda MES MN 1210
Toyota K2601G-1G

Test Data

Glassware Corrosion : ASTM D 1384

	<u>Maximum Allowable Mass Change (mg)</u>				
	<u>AS 2108</u>	<u>ASTM</u> <u>03306</u>	<u>BS 6560</u>	<u>GM 1825M</u>	<u>FM ASC</u> Typical
Copper	10	10	10	10	1
Solder	15	30	15	20	1
Brass	10	10	10	10	0
Steel	10	10	10	10	1
Cast iron	10	10	10	10	2
Cast Aluminium	15	30	15	20	1

Test performed at 1:2 (v/v) in hard water

Corrosion of Heat Stressed Alloy: ASTM D 4340

Maximum Allowable Heat Transfer Corrosion Rate
(mg/cm² /week)

	<u>GM 1825M</u>	<u>ASTM</u> <u>03306</u>	<u>FM ASC</u> Typical
Cast Aluminium	1.00	1.00	0.17

Test performed at 1:3 (v/v) in hard water

Simulated Service: ASTM D 2570

	<u>Maximum Allowable Mass Change (mg)</u>			
	<u>AS 2108</u>	<u>ASTM 03306</u>	<u>GM 1825M</u>	<u>FM ASC Typical</u>
Copper	20	20	20	1
Solder	30	60	60	1
Brass	20	20	20	2
Steel	20	20	20	0
Cast iron	20	20	20	1
Cast Aluminium	30	60	60	1

Test performed at 44% (v/v) in hard water

Cavitation Corrosion: astm d 2809

Corrosion Rating 9
No cavitation damage evident

Properties

- Ph(50% v/v in water) : 7.6
- Reserve Alkalinity ; 17 mls
- Boiling Point (neat) ; 176 degrees C
- Freezing Point -50% v/v in water : -37 degrees C
-30% v/v in water : -17 degrees C
- Foaming – volume : 45 mls
- Foaming – breaking time : 2 seconds
- Chloride : < 10 ppm
- Density : 1.132 g/ml at 20 degrees C
- Flash Point (open cup) : 118 degrees C

MATERIAL SAFETY DATA SHEET

IDENTIFICATION

PRODUCT NAME: All Seasons Coolant
SYNONYMS: All Seasons Coolant
UN NUMBER.: N/A
POISONS SCHEDULE: N/A
DANGEROUS GOODS CLASS: N/A
SUB CLASS: N/A
HAZCHEM: N/A
POISONS SCHEDULE: N/A
USE AND APPLICATION:

PHYSICAL DESCRIPTION / PROPERTIES

APPEARANCE: Clear Green Liquid
ODOUR: Slight Odour
pH: Approx 8.0
VAPOUR PRESSURE: 0.01 kPa (Approximately)
VAPOUR DENSITY: Not Available
BOILING POINT: 190 C
MELTING POINT: Not Available
EVAPORATION RATE: Not Available
SOLUBILITY (WATER): Soluble
SPECIFIC GRAVITY: 1.06 approx
FLASHPOINT: Not relevant
FLAMMABILITY LIMITS - LEL Non Flammable **UEL** Not Relevant
VOLATILES Approx 50%
SOLUBILITY: Soluble
AUTOIGNITION TEMPERATURE: Not Relevant
INGREDIENTS:

Chemical Name	CAS Number	Conc.	Formula
Ethylene Glycol Additives	197-21-1	30-60%	C2-H6-O2

HAZARDS IDENTIFICATION

RISK AND SAFETY PHRASES: CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA. NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE
Risk and Safety Phrases are standardised phrases allocated to Hazardous Substances. Risk phrases convey a general description of the physicochemical, environmental and health hazards of a substance. Safety phrases provide information on safe storage, handling, disposal, personal protection and first aid.

RISK PHRASES
R22 Harmful if swallowed.
SAFETY PHRASES

S2 Keep out of reach of children.

FIRST AID

EYE: Flush gently with running water. Seek medical attention if irritation persists.

INHALATION: Leave area of exposure. If symptoms develop, seek urgent medical attention. If assisting a victim, avoid becoming a casualty, wear a Type A (Organic vapour) respirator (or Air-line respirator in poorly ventilated areas). If victim not breathing, apply artificial respiration and seek urgent medical attention.

SKIN: Remove contaminated clothing and gently flush affected areas with water. Seek medical attention if irritation develops. Launder clothing before reuse.

INGESTION: For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor.

ADVICE TO DOCTOR: Treat symptomatically.

PRECAUTIONS FOR USE

ENVIRONMENT: Ethylene glycol will mainly exist in the vapour phase in the ambient atmosphere where it will be degraded by reaction with hydroxyl radicals. Expected to be very highly mobile in soil. Not anticipated to volatilise from moist soil or water surfaces. Biodegradation in both soil and water is expected to be a major fate process for this compound. Not expected to bioconcentrate in aquatic organisms.

WASTE: For small amounts absorb with sand, vermiculite or similar and dispose of to an approved landfill site. Contact the **Disposal** manufacturer for additional information if larger amounts are involved. Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result. Dispose of in accordance with relevant local legislation.

PPE: Wear coveralls, splash-proof goggles and rubber, butyl or neoprene gloves. Where an inhalation risk exists, wear a Type A (Organic vapour) Respirator.

FLAMMABILITY: Non-flammable.

REACTIVITY: Incompatible with oxidising agents (eg.peroxides, potassium permanganate, ammonium dichromate), acids (eg. sulfuric acid), sodium hydroxide and phosphorus pentasulfide.

DECOMPOSITION: May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

SAFE HANDLING INFORMATION

FIRE/EXPLOSION Non flammable. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

Evacuate area and contact emergency services. Toxic gases (hydrocarbons, carbon/ nitrogen oxides, ammonia) may be evolved. Remain upwind and notify those downwind of hazard. Wear full protective equipment (see spill above) including Self Contained Breathing Apparatus (SCBA) when combating fire. Use water fog to cool intact containers and nearby storage areas.

STORAGE & TRANSPORT:

Store in cool, dry, well ventilated area, removed from oxidising agents (eg. Potassium permanganate, peroxides), acids (eg. sulfuric acid), phosphorus pentasulfide, sodium hydroxide, and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for spills or leaks. Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

SPILLS AND DISPOSAL:

If spilt (bulk), contact emergency services where appropriate. Wear splash-proof goggles, butyl (first choice) or rubber/neoprene gloves, a Type A (Organic vapour) respirator, coveralls and boots. Ventilate and clear area of all unprotected personnel. Prevent spill entering drains or waterways. Absorb spill with sand or similar, collect and place in sealable containers for disposal.

VENTILATION:

Use with adequate natural ventilation. Open windows and doors where possible. In poorly ventilated areas, mechanical extraction ventilation is recommended. Maintain vapor levels below the recommended exposure standard.

Exposure Standards

ETHYLENE GLYCOL (107-21-1)

ES-TWA: 60 mg/m³

ES-STEL : 120 mg/m³

WES-TWA : 50 ppm (127 mg/m³)

HANDLING:

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas (eg. if container is damaged).

RESPIRATORS:

In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

ADDITIONAL INFORMATION:

ETHYLENE GLYCOL: Has been reported to cause teratogenic and mutagenic effects, however the doses recorded for these effects are extremely high. For example experimental rat studies by the oral route have shown that ingestion of 8.5 g/kg by pregnant rats in their

6-15 day of gestation caused teratogenic effects. This equates to the ingestion of 500 ml of ethylene glycol by a 60 kg women for similar effects to occur. Exposure at such levels is not reported in industry.

RISK(S)

PACKING GROUP:

None Allocated

HAZCHEM CODE:

None Allocated

AICS:

All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

POISON:

Classified as a Schedule 5 (S5) Poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

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PLEASE NOTE:

We believe that the information contained herein is reliable but we shall not be liable for any inaccuracy of the information or for any loss, Injury, or damage whatsoever or howsoever arising which may result.