

Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Valve Timing Mix D4815, Part Number 8500-8433

1 . Identification of the material and supplier

Names

Product name : Valve Timing Mix D4815, Part Number 8500-8433
Part No. : 8500-8433
ADG : Not regulated as Dangerous Goods according to the ADG Code

Supplier

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number : CHEMTREC®: +(61)-290372994

Uses

Area of application : Industrial applications, Professional applications.
Material uses : Analytical chemistry.
1 x 1 ml.

2 . Hazards identification

Classification : F; R11
Repr. Cat. 3; R62
Xn; R48/20, R65
Xi; R38
R67
N; R51/53

Risk phrases : R11- Highly flammable.
R62- Possible risk of impaired fertility.
R48/20- Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R65- Harmful: may cause lung damage if swallowed.
R38- Irritating to skin.
R67- Vapours may cause drowsiness and dizziness.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S9- Keep container in a well-ventilated place.
S16- Keep away from sources of ignition - No smoking.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33- Take precautionary measures against static discharges.
S36/37- Wear suitable protective clothing and gloves.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

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

3 . Composition/information on ingredients

Mixture : Yes.

Ingredient name	CAS number	%
n-Hexane	110-54-3	30 - 60
2-Ethoxy-2-methylpropane	637-92-3	<10
tert-Butyl methyl ether	1634-04-4	<10
Diisopropyl ether	108-20-3	<10
Methylcyclopentane	96-37-7	<10

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

- Inhalation** : Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. 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** : Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. 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.
- 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.
- Advice to doctor** : 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.
- Highly 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. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

5 . Fire-fighting measures

- Hazardous thermal decomposition 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.
- Methods for cleaning up** : 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.

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. Remove contaminated clothing and protective equipment before entering eating areas. 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	Exposure limits
n-Hexane	Safe Work Australia (Australia, 4/2013). TWA: 72 mg/m ³ 8 hours. TWA: 20 ppm 8 hours.
2-Ethoxy-2-methylpropane	ACGIH TLV (United States, 6/2013). TWA: 25 ppm 8 hours.
tert-Butyl methyl ether	Safe Work Australia (Australia, 4/2013). TWA: 25 ppm 8 hours. TWA: 92 mg/m ³ 8 hours.

8 . Exposure controls/personal protection

Diisopropyl ether	STEL: 75 ppm 15 minutes. STEL: 275 mg/m ³ 15 minutes. Safe Work Australia (Australia, 4/2013). STEL: 1300 mg/m ³ 15 minutes. STEL: 310 ppm 15 minutes. TWA: 1040 mg/m ³ 8 hours. TWA: 250 ppm 8 hours.
Methylcyclopentane	Safe Work Australia (Australia, 4/2013). STEL: 3500 mg/m ³ 15 minutes. STEL: 1000 ppm 15 minutes. TWA: 1760 mg/m ³ 8 hours. TWA: 500 ppm 8 hours.

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.

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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

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. 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.

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. 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.

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.
Colour	: Colourless.
Odour	: Gasoline-like
Boiling point	: 68.889°C (156°F)
Melting point	: -139.44°C (-219°F)
Vapour pressure	: 20 kPa (150 mm Hg) [room temperature]
Relative density	: 0.66
Flash point	: Closed cup: -21.667°C (-7°F)
Flammable limits	: Lower: 1.1% Upper: 7.5%
Vapour density	: >1 [Air = 1]
pH	: Not available.
Auto-ignition temperature	: Not available.
Evaporation rate	: >1 (butyl acetate = 1)
Solubility	: Not available.

10 . Stability and reactivity

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	: 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. Do not allow vapor to accumulate in low or confined areas.
Materials to avoid	: 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	: Can cause central nervous system (CNS) depression. Vapours may cause drowsiness and dizziness.
Ingestion	: Can cause central nervous system (CNS) depression. Aspiration hazard if swallowed. Can enter lungs and cause damage. Irritating to mouth, throat and stomach.
Skin contact	: Irritating to skin.
Eye contact	: May cause eye irritation.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-Hexane	LC50 Inhalation Vapour	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
2-Ethoxy-2-methylpropane	LC50 Inhalation Vapour	Rat	36200 mg/m ³	4 hours
	LD50 Oral	Rat	7150 mg/kg	-
tert-Butyl methyl ether	LC50 Inhalation Dusts and mists	Rat	41000 mg/m ³	4 hours
	LC50 Inhalation Vapour	Rat	23576 ppm	4 hours
Diisopropyl ether	LD50 Oral	Rat	>4 g/kg	-
	LD50 Oral	Rat	4.5 g/kg	-

Conclusion/Summary : Not available.

Potential chronic health effects

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

11 . Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-Hexane	Eyes - Mild irritant	Rabbit	-	10 milligrams	-
2-Ethoxy-2-methylpropane	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Skin - Moderate irritant	Rabbit	-	4 hours 500 microliters	-
Diisopropyl ether	Skin - Mild irritant	Rabbit	-	363 milligrams	-

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Product name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
n-Hexane	-	-	-	Repr. Cat. 3; R62

Chronic effects : Harmful: danger of serious damage to health by prolonged exposure through inhalation. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

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 : May impair fertility, based on animal data.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

Ingestion : Adverse symptoms may include the following:
 nausea or vomiting
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

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

Eyes : No specific data.

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

12 . Ecological information

Ecotoxicity : This material is toxic to aquatic life with long lasting effects.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
n-Hexane	Acute LC50 113000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
tert-Butyl methyl ether	Acute LC50 672000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Diisopropyl ether	Acute LC50 91700 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Other ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
tert-Butyl methyl ether	-	1.8 % - Inherent - 28 days	2.72 mgO2/mg ThOD	2 mg/l Activated sludge

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
tert-Butyl methyl ether	-	50%; 3.2 day(s)	Inherent

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
n-Hexane	4	501.187	high
2-Ethoxy-2-methylpropane	1.48	-	low
tert-Butyl methyl ether	1.04	1.5	low
Diisopropyl ether	2.4	-	low
Methylcyclopentane	3.37	-	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. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

14 . Transport information

Regulatory information

ADG / IMDG / IATA : Not regulated as Dangerous Goods according to the ADG Code .

Additional information : **Remarks**
De minimis quantities

15 . Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Control of Scheduled Carcinogenic Substances

Ingredient name	Schedule
No listed substance	

Australia inventory (AICS) : Not determined.

16 . Other information

Date of issue : 25/07/2014

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✔ Indicates information that has changed from previously issued version.

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