SAFETY DATA SHEET

Agilent Technologies

VT Sample Kit, Part Number 190350518

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

This product is considered an article. This Safety Data Sheet is written based on the encapsulated substance or mixture in this article.

1.1 Product identifier

Product name : VT Sample Kit, Part Number 190350518

Part No. (Kit) : 190350518

Part No. : Hi Temp Cal 190350679
Lo Temp Cal 190350680

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Analytical chemistry. 2 x 250 µl Hi Temp Cal 250 µl Lo Temp Cal 250 µl

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present potential health and safety hazards.

2.1 Classification of the substance or mixture

Product definition : Hi Temp Cal Mono-constituent substance (encapsulated in article)
Lo Temp Cal Mono-constituent substance (encapsulated in article)

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Hi Temp Cal

H302	ACUTE TOXICITY (oral) - Category 4

Lo Temp Cal

H225	FLAMMABLE LIQUIDS - Category 2
H301	ACUTE TOXICITY (oral) - Category 3
H311	ACUTE TOXICITY (dermal) - Category 3
H331	ACUTE TOXICITY (inhalation) - Category 3
H370	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1

Classification according to Directive 1999/45/EC [DPD]

SECTION 2: Hazards identification

Hi Temp Cal — The product is classified as dangerous according to Directive 67/548/EEC and its amendments.

Lo Temp Cal — The product is classified as dangerous according to Directive 67/548/EEC and its amendments.

Classification	:	Hi Temp Cal	Xn; R22
		Lo Temp Cal	F; R11 T; R23/24/25, R39/23/24/25
Physical/chemical hazards	:	Hi Temp Cal	Not applicable.
		Lo Temp Cal	Highly flammable.
Human health hazards	:	Hi Temp Cal	Harmful if swallowed.
		Lo Temp Cal	Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word	:	Hi Temp Cal	Warning
		Lo Temp Cal	Danger
Hazard statements	:	Hi Temp Cal	**GHS07** - Harmful if swallowed.
		Lo Temp Cal	**GHS02** - Highly flammable liquid and vapour. **GHS06** - Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. **GHS08** - Causes damage to organs.

Precautionary statements

Prevention	:	Hi Temp Cal	P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.
		Lo Temp Cal	P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P260 - Do not breathe vapour.
Response	:	Hi Temp Cal	P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
		Lo Temp Cal	P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or physician. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Storage	:	Hi Temp Cal	Not applicable.
		Lo Temp Cal	P235 - Keep cool.
Disposal	:	Hi Temp Cal	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		Lo Temp Cal	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

SECTION 2: Hazards identification

Hazardous ingredients : **Hi Temp Cal**
Ethanediol

Lo Temp Cal
Methanol

Supplemental label elements : Hi Temp Cal — Not applicable.
Lo Temp Cal — Not applicable.

Special packaging requirements

Tactile warning of danger : Hi Temp Cal — Not applicable.
Lo Temp Cal — Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : Hi Temp Cal — None known.
Lo Temp Cal — Defatting to the skin. Prolonged or repeated contact may dry skin and cause irritation.

SECTION 3: Composition/information on ingredients

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present potential health and safety hazards.

Substance/mixture : Hi Temp Cal — Mono-constituent substance (encapsulated in article)
Lo Temp Cal — Mono-constituent substance (encapsulated in article)

Product/ingredient name	Identifiers	%	Classification 67/548/EEC	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
Hi Temp Cal Ethanediol	EC: 203-473-3 CAS: 107-21-1 Index: 603-027-00-1	100	Xn; R22	Acute Tox. 4, H302	[A]
Lo Temp Cal Methanol	EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	100	F; R11 T; R23/24/25, R39/23/24/25 **See Section 16 for the full text of the R-phrases declared above.**	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370 **See Section 16 for the full text of the H statements declared above.**	[A]

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.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	:	Hi Temp Cal	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.
		Lo Temp Cal	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 necessary, call a poison center or physician.
Inhalation	:	Hi Temp Cal	Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.
		Lo Temp Cal	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. Get medical attention. If necessary, call a poison center or physician. 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	:	Hi Temp Cal	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.
		Lo Temp Cal	Wash skin thoroughly with soap and water or use recognised skin cleanser. 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. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	:	Hi Temp Cal	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. 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 necessary, call a poison center or physician. 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.
		Lo Temp Cal	Get medical attention immediately. Call a poison center or physician. 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. Do not induce vomiting

SECTION 4: First aid measures

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.

Protection of first-aiders : Hi Temp Cal — 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.

Lo Temp Cal — 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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: Hi Temp Cal	No known significant effects or critical hazards.
	Lo Temp Cal	No known significant effects or critical hazards.
Inhalation	: Hi Temp Cal	No known significant effects or critical hazards.
	Lo Temp Cal	Toxic if inhaled.
Skin contact	: Hi Temp Cal	No known significant effects or critical hazards.
	Lo Temp Cal	Toxic in contact with skin. Defatting to the skin. May cause skin dryness and irritation.
Ingestion	: Hi Temp Cal	Harmful if swallowed.
	Lo Temp Cal	Toxic if swallowed.

Over-exposure signs/symptoms

Eye contact	: Hi Temp Cal	No specific data.
	Lo Temp Cal	No specific data.
Inhalation	: Hi Temp Cal	No specific data.
	Lo Temp Cal	No specific data.
Skin contact	: Hi Temp Cal	No specific data.
	Lo Temp Cal	Adverse symptoms may include the following: irritation dryness cracking
Ingestion	: Hi Temp Cal	No specific data.
	Lo Temp Cal	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: Hi Temp Cal	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Lo Temp Cal	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: Hi Temp Cal	No specific treatment.
	Lo Temp Cal	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: Hi Temp Cal	Use an extinguishing agent suitable for the surrounding fire.
	Lo Temp Cal	Use dry chemical, CO_2, water spray (fog) or foam.
Unsuitable extinguishing media	: Hi Temp Cal	None known.
	Lo Temp Cal	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

Hazards from the substance or mixture

: Hi Temp Cal — In a fire or if heated, a pressure increase will occur and the container may burst.

Lo Temp Cal — Highly flammable liquid and vapour. 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.

Hazardous combustion products

: Hi Temp Cal — Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Lo Temp Cal — Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

Special precautions for fire-fighters

: Hi Temp Cal — 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.

Lo Temp Cal — 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.

Special protective equipment for fire-fighters

: Hi Temp Cal — Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Lo Temp Cal — Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: Hi Temp Cal — 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Lo Temp Cal — 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.

SECTION 6: Accidental release measures

For emergency responders : Hi Temp Cal

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Lo Temp Cal

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Hi Temp Cal

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).

Lo Temp Cal

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).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Hi Temp Cal

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. Dispose of via a licensed waste disposal contractor.

Lo Temp Cal

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.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Hi Temp Cal

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Lo Temp Cal

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. 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 only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

SECTION 7: Handling and storage

Advice on general occupational hygiene

: Hi Temp Cal — 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. See also Section 8 for additional information on hygiene measures.

Lo Temp Cal — 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. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

: Hi Temp Cal — Store in accordance with local regulations. 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. 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.

Lo Temp Cal — 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. Store locked up. 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.

7.3 Specific end use(s)

Recommendations

: Hi Temp Cal — Industrial applications, Professional applications.
Lo Temp Cal — Industrial applications, Professional applications.

Industrial sector specific solutions

: Not applicable.

SECTION 8: Exposure controls/personal protection

Since the hazardous ingredient in this article is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Hi Temp Cal Ethanediol	**EU OEL (Europe, 12/2009). Absorbed through skin. Notes: list of indicative occupational exposure limit values** TWA: 20 ppm 8 hours. TWA: 52 mg/m³ 8 hours. STEL: 40 ppm 15 minutes. STEL: 104 mg/m³ 15 minutes.
Lo Temp Cal Methanol	**EU OEL (Europe, 12/2009). Absorbed through skin. Notes: list of indicative occupational exposure limit values** TWA: 200 ppm 8 hours. TWA: 260 mg/m³ 8 hours.

SECTION 8: Exposure controls/personal protection

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 monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

No DNELs available.

Predicted effect concentrations

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls : 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.

Individual protection measures

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.

Eye/face protection : 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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : 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.

Body protection : 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. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : 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.

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Hi Temp Cal	Liquid. [Viscous liquid.]
		Lo Temp Cal	Liquid. [Clear.]
Colour	:	Hi Temp Cal	Colourless.
		Lo Temp Cal	Colourless. Clear.
Odour	:	Hi Temp Cal	Slight
		Lo Temp Cal	Characteristic.
Odour threshold	:	Hi Temp Cal	Not available.
		Lo Temp Cal	Not available.
pH	:	Hi Temp Cal	Not available.
		Lo Temp Cal	Not available.
Melting point/freezing point	:	Hi Temp Cal	-13°C
		Lo Temp Cal	-97.8°C
Initial boiling point and boiling range	:	Hi Temp Cal	198°C
		Lo Temp Cal	60.9°C
Flash point	:	Hi Temp Cal	Closed cup: 111°C Open cup: 115°C
		Lo Temp Cal	Closed cup: 15°C [Setaflash.]
Evaporation rate	:	Hi Temp Cal	0.01 (butyl acetate = 1)
		Lo Temp Cal	2.1 (butyl acetate = 1)
Flammability (solid, gas)	:	Hi Temp Cal	Not applicable.
		Lo Temp Cal	Not applicable.
Upper/lower flammability or explosive limits	:	Hi Temp Cal	Lower: 3.2% Upper: 15.3%
		Lo Temp Cal	Lower: 6% Upper: 44%
Vapour pressure	:	Hi Temp Cal	0.007 kPa [room temperature]
		Lo Temp Cal	16.9 kPa [room temperature]
Vapour density	:	Hi Temp Cal	2.1 [Air = 1]
		Lo Temp Cal	1.1 [Air = 1]
Relative density	:	Hi Temp Cal	1.1
		Lo Temp Cal	0.79
Solubility(ies)	:	Hi Temp Cal	Easily soluble in the following materials: cold water, hot water, methanol and acetone.
		Lo Temp Cal	Easily soluble in the following materials: cold water, hot water, methanol, n-octanol and acetone.
Partition coefficient: n-octanol/water	:	Hi Temp Cal	-1.93
		Lo Temp Cal	-0.77
Auto-ignition temperature	:	Hi Temp Cal	398°C
		Lo Temp Cal	455°C
Decomposition temperature	:	Hi Temp Cal	500 to 600°C
		Lo Temp Cal	Not available.
Viscosity	:	Hi Temp Cal	Dynamic (room temperature): 16.1 mPa·s
		Lo Temp Cal	Dynamic (room temperature): 0.544 to 0.59 mPa·s
Explosive properties	:	Hi Temp Cal	Slightly explosive in the presence of the following materials or conditions: oxidizing materials.
		Lo Temp Cal	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	Hi Temp Cal	No specific test data related to reactivity available for this product or its ingredients.
		Lo Temp Cal	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	Hi Temp Cal	The product is stable.
		Lo Temp Cal	The product is stable.
10.3 Possibility of hazardous reactions	:	Hi Temp Cal	Under normal conditions of storage and use, hazardous reactions will not occur.
		Lo Temp Cal	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	Hi Temp Cal	No specific data.
		Lo Temp Cal	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.
10.5 Incompatible materials	:	Hi Temp Cal	No specific data.
		Lo Temp Cal	Reactive or incompatible with the following materials: oxidizing materials
10.6 Hazardous decomposition products	:	Hi Temp Cal	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Lo Temp Cal	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hi Temp Cal				
Ethanediol	LD50 Oral	Rat	4700 mg/kg	-
Lo Temp Cal				
Methanol	LC50 Inhalation Vapour	Rat	145000 ppm	1 hours
	LC50 Inhalation Vapour	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-

Acute toxicity estimates

Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Hi Temp Cal					
Ethanediol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	1 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	6 hours 1440 milligrams	-
	Skin - Mild irritant	Rabbit	-	555 milligrams	-
Lo Temp Cal					
Methanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	40 milligrams	-

SECTION 11: Toxicological information

	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Lo Temp Cal Methanol	Category 1	Not determined	Not determined

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation :
Hi Temp Cal: No known significant effects or critical hazards.
Lo Temp Cal: Toxic if inhaled.

Ingestion :
Hi Temp Cal: Harmful if swallowed.
Lo Temp Cal: Toxic if swallowed.

Skin contact :
Hi Temp Cal: No known significant effects or critical hazards.
Lo Temp Cal: Toxic in contact with skin. Defatting to the skin. May cause skin dryness and irritation.

Eye contact :
Hi Temp Cal: No known significant effects or critical hazards.
Lo Temp Cal: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation :
Hi Temp Cal: No specific data.
Lo Temp Cal: No specific data.

Ingestion :
Hi Temp Cal: No specific data.
Lo Temp Cal: No specific data.

Skin contact :
Hi Temp Cal: No specific data.
Lo Temp Cal: Adverse symptoms may include the following:
irritation
dryness
cracking

Eye contact :
Hi Temp Cal: No specific data.
Lo Temp Cal: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General :
Hi Temp Cal: No known significant effects or critical hazards.
Lo Temp Cal: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

SECTION 11: Toxicological information

Carcinogenicity	:	Hi Temp Cal	No known significant effects or critical hazards.
		Lo Temp Cal	No known significant effects or critical hazards.
Mutagenicity	:	Hi Temp Cal	No known significant effects or critical hazards.
		Lo Temp Cal	No known significant effects or critical hazards.
Teratogenicity	:	Hi Temp Cal	No known significant effects or critical hazards.
		Lo Temp Cal	No known significant effects or critical hazards.
Developmental effects	:	Hi Temp Cal	No known significant effects or critical hazards.
		Lo Temp Cal	No known significant effects or critical hazards.
Fertility effects	:	Hi Temp Cal	No known significant effects or critical hazards.
		Lo Temp Cal	No known significant effects or critical hazards.

Toxicokinetics

Absorption	:	Hi Temp Cal	Not available.
		Lo Temp Cal	Not available.
Distribution	:	Hi Temp Cal	Not available.
		Lo Temp Cal	Not available.
Metabolism	:	Hi Temp Cal	Not available.
		Lo Temp Cal	Not available.
Elimination	:	Hi Temp Cal	Not available.
		Lo Temp Cal	Not available.
Other information	:	Not available.	

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Hi Temp Cal			
Ethanediol	Acute LC50 100000 µg/l Marine water	Crustaceans - Crangon crangon - Adult	48 hours
	Acute LC50 10000000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 8050000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Lo Temp Cal			
Methanol	Acute EC50 16.912 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 10000000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2500000 µg/l Marine water	Crustaceans - Crangon crangon - Adult	48 hours
	Acute LC50 100 mg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 9.96 mg/l Marine water	Algae - Ulva pertusa	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Hi Temp Cal Ethanediol	-	56 % - Readily - 1 days	100 mg/l	Activated sludge

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hi Temp Cal Ethanediol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Hi Temp Cal Ethanediol	-1.93	-	low
Lo Temp Cal Methanol	-0.77	<10	low

SECTION 12: Ecological information

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

European waste catalogue (EWC)

Waste code	Waste designation
Lo Temp Cal 07 07 04*	other organic solvents, washing liquids and mother liquors

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

This Safety Data Sheet (EU_English) is written based on the encapsulated substance or mixture in this article. Since the hazardous ingredient is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

Regulatory information

ADR/RID / IMDG / IATA : Not regulated.

Additional information : **Remarks**
De minimis quantities

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Substances of very high concern

None of the components are listed.

SECTION 15: Regulatory information

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Black List Chemicals : Not listed

Priority List Chemicals : Not listed

Integrated pollution prevention and control list (IPPC) - Air : Not listed

Integrated pollution prevention and control list (IPPC) - Water : Not listed

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Hi Temp Cal	
Acute Tox. 4, H302	Regulatory data
Lo Temp Cal	
Flam. Liq. 2, H225	Expert judgment
Acute Tox. 3, H301	Expert judgment
Acute Tox. 3, H311	Expert judgment
Acute Tox. 3, H331	On basis of test data
STOT SE 1, H370	Expert judgment

Full text of abbreviated H statements :

Hi Temp Cal

H302	Harmful if swallowed.

Lo Temp Cal

H225	Highly flammable liquid and vapour.
H301 (oral)	Toxic if swallowed.
H311 (dermal)	Toxic in contact with skin.
H331 (inhalation)	Toxic if inhaled.
H370	Causes damage to organs.

Full text of classifications [CLP/GHS] :

Hi Temp Cal

Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4

Lo Temp Cal

Acute Tox. 3, H301	ACUTE TOXICITY (oral) - Category 3
Acute Tox. 3, H311	ACUTE TOXICITY (dermal) - Category 3
Acute Tox. 3, H331	ACUTE TOXICITY (inhalation) - Category 3
Flam. Liq. 2, H225	FLAMMABLE LIQUIDS - Category 2
STOT SE 1, H370	SPECIFIC TARGET ORGAN TOXICITY (SINGLE

SECTION 16: Other information

		EXPOSURE) - Category 1
Full text of abbreviated R phrases	: Hi Temp Cal Lo Temp Cal	R22- Harmful if swallowed. R11- Highly flammable. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R39/23/24/25- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
Full text of classifications [DSD/DPD]	: Hi Temp Cal Lo Temp Cal	Xn - Harmful F - Highly flammable T - Toxic
Date of issue/ Date of revision	: 28/07/2014	
Date of previous issue	: 16/10/2013.	
Version	: 2	

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