

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

1.1 Product identifier

· **Trade name:** STD - RGA Calibration Blend with/without adapter

· **Article number:**

N6107199

N6107198

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

No further relevant information available.

· **Application of the substance / the mixture** Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Supplier/Local:

PerkinElmer Australia
Lvl 2, Bldg 5, Brandon Office Park
530-540 Springvale Road
Glen Waverley
Melbourne
VIC 3150
Australia
1-800-033-391
ausales@perkinelmer.com

· **1.4 Emergency telephone number:**

CHEMTREC (within US) 800-424-9300

CHEMTREC (from outside US) +1 703-527-3887 (call collect)

CHEMTREC (within AU) +(61)-290372994

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS01 exploding bomb

Unst. Expl. H200 Unstable explosives.



GHS08 health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 1A H360D May damage the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

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Trade name: STD - RGA Calibration Blend with/without adapter

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- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS01, GHS07, GHS08
- **Signal word** Danger
- **Hazard-determining components of labelling:**
1,3-butadiene buta-1,3-diene
carbon monoxide
- **Hazard statements**
Unstable explosives.
Harmful if inhaled.
May cause genetic defects.
May cause cancer.
May damage the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.
- **Precautionary statements**
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
DO NOT fight fire when fire reaches explosives.
Evacuate area.
Store in accordance with local/regional/national/international regulations.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **2.3 Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

· Dangerous components:		
CAS: 7727-37-9 EINECS: 231-783-9	nitrogen Press. Gas R, H281	36.2%
CAS: 74-98-6 EINECS: 200-827-9	propane Flam. Gas 1, H220 Press. Gas C, H280	6.0%
CAS: 75-28-5 EINECS: 200-857-2	isobutane Flam. Gas 1, H220 Press. Gas C, H280	5.0%
CAS: 1333-74-0 EINECS: 215-605-7	hydrogen Flam. Gas 1, H220 Press. Gas C, H280	5.0%

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		(Contd. of page 2)
CAS: 106-97-8 EINECS: 203-448-7	butane Flam. Gas 1, H220 Press. Gas C, H280	4.0%
CAS: 74-84-0 EINECS: 200-814-8	ethane Flam. Gas 1, H220 Press. Gas C, H280	4.0%
CAS: 624-64-6 EINECS: 210-855-3	(E)-but-2-ene Flam. Gas 1, H220 Press. Gas C, H280	3.0%
CAS: 106-99-0 EINECS: 203-450-8	1,3-butadiene buta-1,3-diene Flam. Gas 1, H220 Muta. 1B, H340; Carc. 1A, H350 Press. Gas C, H280	3.0%
CAS: 115-07-1 EINECS: 204-062-1	propene Flam. Gas 1, H220 Press. Gas C, H280	3.0%
CAS: 124-38-9 EINECS: 204-696-9	carbon dioxide Press. Gas L, H280	3.0%
CAS: 590-18-1 EINECS: 209-673-7	(Z)-but-2-ene Flam. Gas 1, H220 Press. Gas C, H280	2.0%
CAS: 106-98-9 EINECS: 203-449-2	but-1-ene Flam. Gas 1, H220 Press. Gas C, H280	2.0%
CAS: 109-66-0 EINECS: 203-692-4	pentane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 STOT SE 3, H336	2.0%
CAS: 74-85-1 EINECS: 200-815-3	ethylene Flam. Gas 1, H220 STOT SE 3, H336 Press. Gas C, H280	2.0%
CAS: 463-49-0 EINECS: 207-335-3	allene Flam. Liq. 1, H224 Press. Gas L, H280	1.0%
CAS: 74-86-2 EINECS: 200-816-9	acetylene Flam. Gas 1, H220 Press. Gas C, H280	1.0%
CAS: 78-78-4 EINECS: 201-142-8	isopentane Flam. Liq. 1, H224 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 STOT SE 3, H336	1.0%
CAS: 115-11-7 EINECS: 204-066-3	2-methylpropene Flam. Gas 1, H220 Press. Gas C, H280	1.0%

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CAS: 7440-37-1 EINECS: 231-147-0	argon Press. Gas R, H281	1.0%
CAS: 630-08-0 EINECS: 211-128-3	carbon monoxide Flam. Gas 1, H220 Acute Tox. 3, H331 Repr. 1A, H360D; STOT RE 1, H372 Press. Gas C, H280	1.0%
CAS: 110-54-3 EINECS: 203-777-6	n-hexane Flam. Liq. 2, H225 Repr. 2, H361f; STOT RE 2, H373; Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Skin Irrit. 2, H315; STOT SE 3, H336	0.1%

Additional Components

CAS: 627-20-3 EINECS: 210-988-7	(Z)-pent-2-ene Flam. Liq. 2, H225	0.4%
CAS: 109-67-1 EINECS: 203-694-5	pent-1-ene Flam. Liq. 1, H224	0.4%
CAS: 513-35-9 EINECS: 208-156-3	2-methylbut-2-ene Flam. Liq. 1, H224 Acute Tox. 4, H302	0.2%
CAS: 646-04-8 EINECS: 211-461-4	trans-pent-2-ene Flam. Liq. 1, H224	0.2%

Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Generally the product does not irritate the skin.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: If symptoms persist consult doctor.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

5.2 Special hazards arising from the substance or mixture No further relevant information available.

5.3 Advice for firefighters

Protective equipment: Mouth respiratory protective device.

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SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Remove persons from danger area.
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Prevent impact and friction.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

106-97-8 butane	
WEL	Short-term value: 1810 mg/m ³ , 750 ppm Long-term value: 1450 mg/m ³ , 600 ppm Carc (if more than 0.1% of buta-1,3-diene)
106-99-0 1,3-butadiene buta-1,3-diene	
WEL	Long-term value: 22 mg/m ³ , 10 ppm Carc
124-38-9 carbon dioxide	
WEL	Short-term value: 27400 mg/m ³ , 15000 ppm Long-term value: 9150 mg/m ³ , 5000 ppm
109-66-0 pentane	
WEL	Long-term value: 1800 mg/m ³ , 600 ppm

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78-78-4 isopentane	
WEL	Long-term value: 1800 mg/m ³ , 600 ppm
630-08-0 carbon monoxide	
WEL	Short-term value: 232 mg/m ³ , 200 ppm Long-term value: 35 mg/m ³ , 30 ppm
	BMGV
110-54-3 n-hexane	
WEL	Long-term value: 72 mg/m ³ , 20 ppm
Ingredients with biological limit values:	
630-08-0 carbon monoxide	
BMGV	30 ppm Medium: end-tidal breath Sampling time: post shift Parameter: carbon monoxide

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Store protective clothing separately.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Gaseous
Colour:	According to product specification
· Odour:	Characteristic
· Odour threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.

· Flash point: Not applicable.

· Flammability (solid, gas): Not determined.

· Ignition temperature: 470 °C

· Decomposition temperature: Not determined.

· Auto-ignition temperature: Product is not selfigniting.

· Explosive properties: Risk of explosion by shock, friction, fire or other sources of ignition.

· Explosion limits:

Lower:	4 Vol %
Upper:	75.6 Vol %

· Vapour pressure: Not determined.

· Density: Not determined.

· Relative density: Not determined.

· Vapour density: Not determined.

· Evaporation rate: Not applicable.

· Solubility in / Miscibility with water:

Not miscible or difficult to mix.

· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

· Solvent content:

Organic solvents: 13.1 %

· 9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1 Reactivity: No further relevant information available.

· 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions: No dangerous reactions known.

· 10.4 Conditions to avoid: No further relevant information available.

· 10.5 Incompatible materials: No further relevant information available.

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· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

· **Acute toxicity**
Harmful if inhaled.

· LD/LC50 values relevant for classification:

106-99-0 1,3-butadiene buta-1,3-diene

Oral	LD50	5,480 mg/kg (rat)
Inhalative	LC50/4 h	285 mg/l (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**
May cause genetic defects.
- **Carcinogenicity**
May cause cancer.
- **Reproductive toxicity**
May damage the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**
May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Harmful to aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number · ADR, IMDG, IATA	UN1954
· 14.2 UN proper shipping name · ADR, IMDG, IATA	COMPRESSED GAS, FLAMMABLE, N.O.S. (HYDROGEN, COMPRESSED, PROPANE)
· 14.3 Transport hazard class(es) · ADR, IMDG, IATA	
· Class · Label	2.1 2.1
· 14.4 Packing group · ADR	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user · EMS Number: · Stowage Category · Stowage Code	Not applicable. F-D,S-U D SW2 Clear of living quarters.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· UN "Model Regulation":	UN 1954 COMPRESSED GAS, FLAMMABLE, N.O.S. (HYDROGEN, COMPRESSED, PROPANE), 2.1

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture			
CAS: 7727-37-9 EINECS: 231-783-9	nitrogen	 Press. Gas R, H281	36.2%
CAS: 74-98-6 EINECS: 200-827-9	propane	 Flam. Gas 1, H220 Press. Gas C, H280	6.0%
CAS: 75-28-5 EINECS: 200-857-2	isobutane	 Flam. Gas 1, H220 Press. Gas C, H280	5.0%

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- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS01, GHS07, GHS08
- **Signal word** *Danger*
- **Hazard-determining components of labelling:**
1,3-butadiene buta-1,3-diene
carbon monoxide
- **Hazard statements**
Unstable explosives.
Harmful if inhaled.
May cause genetic defects.
May cause cancer.
May damage the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.
- **Precautionary statements**
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
DO NOT fight fire when fire reaches explosives.
Evacuate area.
Store in accordance with local/regional/national/international regulations.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category** P1a EXPLOSIVES
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 10 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 28, 29
- **National regulations:**
- **Additional classification according to Decree on Hazardous Materials, Annex II:**
Carcinogenic hazardous material group III (dangerous).
- **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
- **Waterhazard class:** Water hazard class 3 (Self-assessment): extremely hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Disclaimer

The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer Life and Analytical Sciences shall not be held liable for any damage resulting from handling or from contact with the product.

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· Relevant phrases

- H220 Extremely flammable gas.
- H224 Extremely flammable liquid and vapour.
- H225 Highly flammable liquid and vapour.
- H280 Contains gas under pressure; may explode if heated.
- H281 Contains refrigerated gas; may cause cryogenic burns or injury.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H331 Toxic if inhaled.
- H336 May cause drowsiness or dizziness.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H360D May damage the unborn child.
- H361f Suspected of damaging fertility.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H411 Toxic to aquatic life with long lasting effects.

· Department issuing SDS:

PerkinElmer
Chalfont Road
Buckinghamshire
Seer Green
HP9 2FX
United Kingdom
Telephone : 0800-89 60 46
FAX : 0800-89 17 14

· Contact:

With in the USA: 1-(800)-762-4000
Out side the USA: 1-(203)-712-8488

· Abbreviations and acronyms

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Unst. Expl.: Explosives – Unstable explosive
Flam. Gas 1: Flammable gases – Category 1
Press. Gas C: Gases under pressure – Compressed gas
Press. Gas L: Gases under pressure – Liquefied gas
Press. Gas R: Gases under pressure – Refrigerated liquefied gas
Flam. Liq. 1: Flammable liquids – Category 1
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1A: Carcinogenicity – Category 1A
Repr. 1A: Reproductive toxicity – Category 1A
Repr. 2: Reproductive toxicity – Category 2

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STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
· *** Data compared to the previous version altered.**

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