

Hazardous according to criteria of Australian Safety and Compensation Council.

1 Identification

- **Product identifier**
- **Trade name: STD - RGA Calibration Blend with/without adapter**
- **Article number:**
N6107199
N6107198
- **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
- **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
- **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

2 Hazard(s) Identification

- **Classification of the substance or mixture**



exploding bomb

Unst. Expl. H200 Unstable explosives.



health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 1A H360 May damage fertility or the unborn child.

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



Acute Tox. 4 H332 Harmful if inhaled.

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- **Label elements**
- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms** GHS01, GHS07, GHS08
- **Signal word** Danger
- **Hazard-determining components of labelling:**
1,3-butadiene buta-1,3-diene
carbon monoxide
- **Hazard statements**
H200 Unstable explosives.
H332 Harmful if inhaled.
H340 May cause genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P281 Use personal protective equipment as required.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P373 DO NOT fight fire when fire reaches explosives.
P380 Evacuate area.
P401 Store in accordance with local/regional/national/international regulations.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **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.

3 Composition and Information on Ingredients
































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

· **Dangerous components:**

7727-37-9	nitrogen ⚠ Press. Gas R, H281	36.2%
74-98-6	propane ⚠ Flam. Gas 1, H220 Press. Gas C, H280	6.0%
75-28-5	isobutane ⚠ Flam. Gas 1, H220 Press. Gas C, H280	5.0%
1333-74-0	hydrogen ⚠ Flam. Gas 1, H220 Press. Gas C, H280	5.0%

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		(Contd. of page 2)
106-97-8	butane  Flam. Gas 1, H220  Press. Gas C, H280	4.0%
74-84-0	ethane  Flam. Gas 1, H220  Press. Gas C, H280	4.0%
624-64-6	(E)-but-2-ene  Flam. Gas 1, H220  Press. Gas C, H280	3.0%
106-99-0	1,3-butadiene buta-1,3-diene  Flam. Gas 1, H220  Muta. 1B, H340; Carc. 1A, H350  Press. Gas C, H280	3.0%
115-07-1	propene  Flam. Gas 1, H220  Press. Gas C, H280	3.0%
124-38-9	carbon dioxide  Press. Gas L, H280	3.0%
590-18-1	(Z)-but-2-ene  Flam. Gas 1, H220  Press. Gas C, H280	2.0%
106-98-9	but-1-ene  Flam. Gas 1, H220  Press. Gas C, H280	2.0%
109-66-0	pentane  Flam. Liq. 2, H225  Asp. Tox. 1, H304  STOT SE 3, H336	2.0%
74-85-1	ethylene  Flam. Gas 1, H220  STOT SE 3, H336  Press. Gas C, H280	2.0%
463-49-0	allene  Flam. Liq. 1, H224  Press. Gas L, H280	1.0%
74-86-2	acetylene  Flam. Gas 1, H220  Press. Gas C, H280	1.0%
78-78-4	isopentane  Flam. Liq. 1, H224  Asp. Tox. 1, H304  STOT SE 3, H336	1.0%
115-11-7	2-methylpropene  Flam. Gas 1, H220; Flam. Liq. 1, H224  Press. Gas C, H280	1.0%

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7440-37-1	argon Press. Gas R, H281		1.0%
630-08-0	carbon monoxide Flam. Gas 1, H220 Acute Tox. 3, H331 Repr. 1A, H360; STOT RE 1, H372 Press. Gas C, H280		1.0%
110-54-3	n-hexane Flam. Liq. 2, H225 Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H336		0.1%
Additional Components			
627-20-3	(Z)-pent-2-ene	Flam. Liq. 2, H225	0.4%
109-67-1	pent-1-ene	Flam. Liq. 1, H224	0.4%
513-35-9	2-methylbut-2-ene	Flam. Liq. 1, H224 Acute Tox. 3, H301	0.2%
646-04-8	trans-pent-2-ene	Flam. Liq. 1, H224	0.2%

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

4 First Aid Measures

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.

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

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire Fighting Measures

Extinguishing media

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

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

Advice for firefighters

Protective equipment: Mouth respiratory protective device.

6 Accidental Release Measures

Personal precautions, protective equipment and emergency procedures Remove persons from danger area.

Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system.

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- **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **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.

7 Handling and Storage

- **Handling:**
- **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.
- **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.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

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

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

7727-37-9 nitrogen	
WES	Asphyxiant
74-98-6 propane	
WES	Asphyxiant
1333-74-0 hydrogen	
WES	Asphyxiant
106-97-8 butane	
WES	Long-term value: 1900 mg/m ³ , 800 ppm
74-84-0 ethane	
WES	Asphyxiant
106-99-0 1,3-butadiene buta-1,3-diene	
WES	Long-term value: 22 mg/m ³ , 10 ppm
115-07-1 propene	
WES	Asphyxiant

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124-38-9 carbon dioxide	
WES	Short-term value: 54000 mg/m ³ , 30000 ppm Long-term value: 9000 *22500 mg/m ³ , 5000 *12500 ppm *in coal mines
109-66-0 pentane	
WES	Short-term value: 2210 mg/m ³ , 750 ppm Long-term value: 1770 mg/m ³ , 600 ppm
74-85-1 ethylene	
WES	Asphyxiant
74-86-2 acetylene	
WES	Asphyxiant
7440-37-1 argon	
WES	Asphyxiant
630-08-0 carbon monoxide	
WES	Long-term value: 34 mg/m ³ , 30 ppm
110-54-3 n-hexane	
WES	Long-term value: 72 mg/m ³ , 20 ppm

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

· **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.

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· **Eye protection:**



Tightly sealed goggles

9 Physical and Chemical Properties

· **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 %

· **Other information** No further relevant information available.

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10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

· **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** No irritant effect.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

The product can cause inheritable damage.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Muta. 1B, Carc. 1A, Repr. 1A

12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **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.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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13 Disposal considerations

- **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.

14 Transport information

· UN-Number · ADG, IMDG, IATA	UN1954
· UN proper shipping name · ADG, IMDG, IATA	COMPRESSED GAS, FLAMMABLE, N.O.S. (HYDROGEN, COMPRESSED, PROPANE)
· Transport hazard class(es) · ADG, IMDG, IATA	
	
· Class · Label	2.1 2.1
· Packing group · ADG	Void
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user · EMS Number: · Stowage Category · Stowage Code	Not applicable. F-D,S-U D SW2 Clear of living quarters.
· 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

15 Regulatory information

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

· **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

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

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- **Hazard pictograms** GHS01, GHS07, GHS08
- **Signal word** *Danger*
- **Hazard-determining components of labelling:**
1,3-butadiene buta-1,3-diene
carbon monoxide
- **Hazard statements**
H200 Unstable explosives.
H332 Harmful if inhaled.
H340 May cause genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P281 Use personal protective equipment as required.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P373 DO NOT fight fire when fire reaches explosives.
P380 Evacuate area.
P401 Store in accordance with local/regional/national/international regulations.
P501 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
- **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.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.

Relevant phrases

- H220 Extremely flammable gas.
- H224 Extremely flammable liquid and vapour.
- H225 Highly flammable liquid and vapour.

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

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- H280 Contains gas under pressure; may explode if heated.
- H281 Contains refrigerated gas; may cause cryogenic burns or injury.
- H301 Toxic 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.
- H360 May damage fertility or the unborn child.
- H361 Suspected of damaging fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure.

• **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

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

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