



Safety Data Sheet Breaker J481

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Breaker J481
Product code J481

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

Recommended Use Used as a fracturing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier

Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards Not classified

Physical Hazards

Oxidizing Solids	Category 1
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2.2 Label elements



Signal word

DANGER

Hazard Statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H271 - May cause fire or explosion; strong oxidizer

Precautionary statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P220 - Keep/Store away from clothing/ combustible materials
P221 - Take any precaution to avoid mixing with combustibles
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P370 + P378 - In case of fire: Use water spray to extinguish
P371 + P380 + P375 - In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion

Supplementary precautionary statements

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P283 - Wear fire/flame resistant/retardant clothing
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P306 + P360 - IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P410 - Protect from sunlight
P411 - Store at temperatures not exceeding 43 °C/ 110 °F
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains

Sodium bromate

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
May cause or intensify fire; oxidizer

Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Sodium bromate	232-160-4	7789-38-0	60 - 100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.
Eye Contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention if irritation persists.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Deluge with water. Other methods not effective.

Extinguishing media which must not be used for safety reasons

Dry chemical, carbon dioxide and other gas-filled extinguishers.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards

May intensify fire; oxidizer.

Hazardous combustion products

Fire or high temperatures create: Oxygen, Bromine, bromine oxides and hydrogen bromide.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG

1Y

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls

Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up

Take up mechanically and collect in suitable container for disposal. Take precautionary measures against static discharges. Use non-sparking tools and equipment. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling

Do not handle until all safety precautions have been read and understood. Handle in accordance with good industrial hygiene and safety practice. Follow procedures for safe handling of oxidizers. Keep away from heat, sparks and open flame. No smoking. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures

Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Oxidizers must be stored separately from all other materials. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Keep away from direct sunlight. Keep at a temperature not exceeding 110 °F /43 °C. Keep away from open flames, hot surfaces and sources of ignition. Oxidizing material - Keep away from flammable and combustible materials. Store away from incompatible materials. Oxidizing agents. Reducing Agents. Acids.
Storage class	Oxidiser storage.
Packaging materials	Use specially constructed containers only. Coated (epoxy phenolic) steel drum or high density polyethylene (HDPE) can.
Packaging materials to be avoided	Containers made of MONEL, copper, brass, or iron.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Sodium bromate	Not determined	Not determined	Not determined
Chemical Name	India	Indonesian	Japan
Sodium bromate	Not determined	Not determined	Not determined
Chemical Name	Kazakhstan	Kuwait	New Zealand
Sodium bromate	Not determined	Not determined	Not determined
Chemical Name	Malaysia	Philippines	Russia
Sodium bromate	Not determined	Not determined	Not determined
Chemical Name	Thailand	Vietnam	Turkey
Sodium bromate	Not determined	Not determined	Not determined

Notes

No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls

Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile PVC Butyl Frequent change is advisable
Respiratory protection	Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information
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9. Physical and Chemical Properties**9.1 Information on basic physical and chemical properties**

Physical state	Solid
Appearance	Granules
Odor	None
Color	White
Odor threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	No information available	
pH @ dilution	6.5 +/- 1	(5% solution)
Melting / freezing point	381 °C / 717.8 °F	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability (solid, gas)	Not applicable	
Flammability Limit in Air		
Upper flammability limit	No information available	
Lower flammability limit	No information available	
Vapor pressure	Not applicable	
Vapor density	Not applicable	
Specific gravity	3.3	20 °C
Bulk density	2060 kg/m ³	
Relative density	No information available	
Water solubility	360 g/L	@ 20 °C
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	381 °C / 718 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
log Pow	No information available	

Explosive properties None
Oxidizing properties Oxidizer. Contact with other material may cause fire

9.2 Other information

Pour point No information available
Molecular weight No information available
VOC content(%) None
Density No information available

Comments

The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Reacts violently with any compounds containing ammonium salt creating a shock-sensitive explosion. Strong oxidizing agents.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Oxidizing material - Keep away from flammable and combustible materials. Avoid heat, flames and other sources of ignition. Protect from moisture. Avoid dust formation. Avoid contamination. Keep away from direct sunlight. Keep at a temperature not exceeding 110 °F /43 °C.

10.5 Incompatible materials

SEVERELY incompatible with ammonium salts (explosive). Do not mix oxidizers of any concentration with other oxidizing agents, reducing agents, flammable or combustible liquids or solids, acids, most metals and heavy metals, oxygen scavengers, corrosion inhibitors, surfactants, gelling agents, fluid-loss additives, cross linkers, solvents, foaming agents, clay control agents, or any chemical not specifically mentioned as being compatible with the specific oxidizer.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Inhalation May cause respiratory irritation.
Eye contact Causes serious eye irritation.
Skin contact Causes skin irritation.
Ingestion Harmful if swallowed.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium bromate	300 mg/kg	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects Suspected of causing genetic defects.

Carcinogenicity May cause cancer.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Eyes. Skin contact. Inhalation. Ingestion.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Category 3

Specific target organ toxicity - Repeated exposure Not classified.

Target organ effects Respiratory system.

Aspiration hazard Not applicable.

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological Information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae

This product is not considered toxic to algae.

Toxicity to fish

This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates

This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sodium bromate	No information available	No information available	No information available

12.2 Persistence and degradability

Readily biodegradable.

Chemical Name	Persistence and degradability
Sodium bromate	Readily biodegradable

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

Chemical Name	Bioaccumulation
Sodium bromate	Product/Substance is inorganic

12.4 Mobility**Mobility**

The product is water soluble, and may spread in water systems.

Chemical Name	Mobility
Sodium bromate	Soluble in water

Mobility in soil

No information available.

Chemical Name	Mobility in soil
Sodium bromate	No information available

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods**Waste from residues/unused products**

Dispose of in accordance with local regulations.

Contaminated packaging

Do not re-use empty containers. Dispose of contents/container to an approved waste disposal plant.

14. Transport information

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG) UN 1494
UN No. (IMDG/ANTAQ) UN 1494
UN No. (ICAO/ANAC) UN 1494

14.2. UN proper shipping name

SODIUM BROMATE,

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class 5.1
IMDG/ANTAQ Hazard class 5.1
ICAO/ANAC Hazard class/division 5.1

14.4 Packing group

ADR/RID/ADN/ADG Packing group II
IMDG/ANTAQ Packing group II
ICAO/ANAC Packing group II

**14.5 Environmental hazard**

No

14.6 Special precautions

Hazard identification no (ADR) 50
EmS (IMDG) F-H, S-Q
Emergency Action Code (EAC) 1Y
Tunnel restriction code (E)
Hazchem code ADG 1Y

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)****Australian Standard for the Uniform Scheduling of Drugs and Poisons**Sodium bromate
Schedule 6**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].****National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	10-Aug-2017
Revision date	12-Jul-2018
Version	3
This SDS has been revised in the following section(s)	2, 7, 12, No changes with regard to classification have been made. Updated according to GHS/CLP.

Key literature references and sources for data

www.ChemADVISOR.com

Supplier

National Chemical Inventories

National regulatory information

National occupational exposure limits

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