

Chemicals that may be used in Australian CSG fracking fluid*

| <i>Chemical</i> | <i>Fracking use</i> | <i>Common/household use example</i> |
|---|---|--|
| 1-Propanol | Complexor | Used as a solvent in the pharmaceutical industry |
| 2-Butoxyethanol | Used to reduce surface tension to aid in gas flow | Used in whiteboard cleaners, liquid soaps, cosmetics and lacquers. |
| Acetic Acid | pH buffer | Gives vinegar its taste |
| Acrylic copolymer | Lubricant | Used as a soil-repellent coating by the building industry |
| Ammonium persulfate | Breaker used to reduce viscosity (turns a gel into water) | Used in hair bleach, blot gels and glass cleaning products |
| Boric Acid | Crosslinker to increase viscosity | Used in antiseptics to treat cuts and fungal infections (athlete's foot) |
| Boric Oxide | Crosslinker to increase viscosity | Used to produce high strength alloys, glasses and ceramics |
| Carbonic acid | Crosslinker to increase viscosity | Found in soft drinks, champagne, and blood |
| Carboxy-Methyl Hydroxy-Propyl Guar | Gelling agent (thickens fluid to help suspend sand) | A more refined version of guar which is found in food products |
| Crystalline silica (cristobalite) | Proppant (holds open fractures) | Sand and gravel |
| Crystalline silica (quartz) | Proppant (holds open fractures) | Sand and gravel |
| Citric Acid | Iron control or for cleaning well bores before fracking | Contained in orange juice |
| Diammonium Peroxodisulphate | Breaker used to reduce viscosity (turns a gel into water) | Used in hair bleach, blot gels and glass cleaning products |
| Disodium Octaborate Tetrahydrate | Gelling agent/Crosslinker to increase viscosity | Used as a fertilizer |
| Gas oils (petroleum), hydrotreated light vacuum | Guar liquifier | Baby oil, coolant or thermal fluid, wood conditioner |
| Fumaric acid | pH buffer | Used to treat psoriasis, and as a flavouring, and to make sourdough and rye bread |
| Gelatine | Corrosion inhibitor or gelling agent | Used to make jelly |
| Guar Gum | Gelling agent (thickens fluid to help suspend sand) | Used as a food thickening agent |
| Hemicellulase Enzyme with/without Sodium Chloride | Breaker used to reduce viscosity (turns a gel into water) | Commercial food processing of coffee |
| Hydrochloric Acid | Cleaning of the wellbore prior to fracking | Used to clean swimming pool filters |
| Hydroxy-Ethyl Cellulose | Gelling agent (thickens fluid to help suspend sand) | Used as a placebo in medical trials |
| Hydroxy-Propyl Guar | Gelling agent (thickens fluid to help suspend sand) | Refined version of guar - used in food products such as cheese and ice cream |
| Magnesium silicate hydrate | Gelling agent | Chemically identical to talcum powder |
| Methanol | Used to reduce surface tension to aid in gas flow | A type of alcohol, can be used in wastewater treatment and as an alternative fuel |
| Mono ethanol amine | Gelling agent | Used in the manufacture of cosmetics, pharmaceuticals, and emulsifiers |
| Ethylene Glycol Monobutyl Ether | Mutual solvent | Used in household cleaners, fire fighting foam, and to degrease bowling pins and lanes |
| Muriatic Acid | Used for cleaning the well bore | Leather tanning and for cleaning |
| Non-crystalline silica | Proppant (holds open fractures) | Used to make glass |
| Poly (oxy-1,2-ethanediyl) | Proppant (holds open fractures) | Hair treatments and shampoo |
| Polydimethyldiallylammonium chloride | Clay control | Used in waste water treatment |
| Potassium Carbonate | pH buffer | Commonly used to make soap, wine, glass, dyes, and as a fire suppressant |
| Potassium Chloride | Clay inhibitor | Table salt substitute |
| Quaternary Polyamines | Clay control | Used in waste water treatment |
| Sodium Acetate | pH buffer | Provides the primary flavouring in salt and vinegar potato chips |
| Sodium Borate | pH buffer | A component in glass, pottery, and detergents |
| Sodium Bicarbonate | pH buffer | Used in cooking |
| Sodium Carbonate (Soda Ash) | pH buffer | Used to neutralise acid |
| Sodium Chloride | Breaker used to reduce viscosity (turns a gel into water) | Table salt |
| Sodium Hydroxide | pH buffer | Used as a buffer (adjust pH) |
| Sodium Hypochlorite with/without Sodium Hydroxide | Antiseptic to eliminate bacteria in water | Bleach - used in household cleaning and swimming pools to kill bacteria |
| Sodium Persulfate | Breaker used to reduce viscosity (turns a gel into water) | Used as a bleach in hair treatments, also as a detergent and soil conditioner |
| Terpenes/terpenoids/sweet orange oil | Used to reduce surface tension to aid in gas flow | Used in pharmaceuticals, contributes to the flavour of cinnamon, cloves and ginger |
| Tetrakis (hydroxymethyl) Phosphonium Sulfate | Antiseptic to eliminate bacteria in water | Used an antiseptic to eliminate bacteria in water in farming and petroleum |
| Tetramethyl ammonium chloride | Clay control | A type of salt |
| Zirconium complex | Crosslinker to increase viscosity | Used as an alloying agent in surgical appliances |

Notes:

* All chemicals used in Australian CSG fracking fluids are listed

* Fracking fluid mixes vary according to the nature of the task, and only a limited set of the above chemicals are used in any single job

* List is accurate as at 1 November 2010