# SAFETY DATA SHEET

Castrol Radicool NF

## Section 1. Identification

**Product name** Castrol Radicool NF

**Product code** 467186-AU33

**SDS no.** 467186

**Use of the substance/mixture** Coolant and antifreeze.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

**Product type** Liquid.

**Supplier** Castrol New Zealand Limited
73 Remuera Road
Newmarket
Auckland, New Zealand

www.castrol.com/nz
Technical Helpline 0800 10 40 60

**Emergency telephone number** 0800 243643 (0800 CHEMHELP) (NZ use only)

**New Zealand National Poisons Centre** 0800 764 766 National Poison Centre

## Section 2. Hazards identification

**HSNO Classification** ACUTE TOXICITY (oral) - Category 4
REPRODUCTIVE TOXICITY - Category 1
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

This material is classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

This material is not classified as DANGEROUS GOODS according to criteria in New Zealand Standard 5433:2012 Transport of Dangerous Goods on Land.

**Routes of entry** Dermal contact. Eye contact. Inhalation.

**GHS label elements**

**Signal word** Danger

**Hazard statements** Harmful if swallowed.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure. (kidneys)

**Precautionary statements**

**Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. Do not breathe vapour. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

**Response** IF exposed or concerned: Get medical attention. IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.

**Storage** Store locked up.

**Disposal** Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Symbol**

**Other hazards which do not result in classification** None known.

# Section 3. Composition/information on ingredients

**Substance/mixture** Mixture

Ethylene glycol Corrosion inhibitor.

| Ingredient name | % (w/w) | CAS number |
|---|---|---|
| Ethylene glycol | ≥90 | 107-21-1 |
| Sodium 2-ethylhexanoate | ≤3 | 19766-89-3 |
| disodium sebacate | ≤3 | 17265-14-4 |
| disodium tetraborate, anhydrous | <1 | 1330-43-4 |

**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.**

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

# Section 4. First aid measures

## Description of necessary first aid measures

**Inhalation** If inhaled, remove to fresh air. Get medical attention.

**Ingestion** Wash out mouth with water if person is conscious. If ingested, call a physician or Poison Control Center immediately. Get medical attention urgently informing the doctor that a product containing ethylene glycol has been ingested and specific treatment may be required. Transport casualty together with the product container, its label, or the safety data sheet urgently to hospital. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Skin contact** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

**Eye contact** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if symptoms occur.

## Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician**

**Protection of first-aiders** 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.

# Section 5. Firefighting measures

## Extinguishing media

**Suitable** In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.

**Not suitable** Do not use water jet.

**Specific hazards arising from the chemical** In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous combustion products** Combustion products may include the following:
metal oxide/oxides
carbon oxides (CO, $CO_2$) (carbon monoxide, carbon dioxide)

**Hazchem code** Not available.

**Special precautions for fire-fighters** No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

**Special protective equipment for fire-fighters** Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

**For emergency responders**

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

**Environmental precautions**

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).

**Methods and material for containment and cleaning up**

**Small spill**

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill**

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilt product. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

**Precautions for safe handling**

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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. Avoid contact of spilt material and runoff with soil and surface waterways. Avoid prolonged or repeated contact with skin. During metal working, solid particles from workpieces or tools will contaminate the fluid and may cause abrasions of the skin. Where such abrasions result in a penetration of the skin, first aid treatment should be applied as soon as reasonably possible. The presence of certain metals in the workpiece or tool, such as chromium, cobalt and nickel, can contaminate the metalworking fluid and as a result may induce allergic skin reactions. Evaporation of water from soluble cutting fluids during use may lead to an increase in concentration which may result in the development of skin conditions due to irritation and defatting. It is important to monitor fluid strength on a regular basis with a refractometer and maintain it at the recommended concentration. Lubricants from other sources and other contaminants should be minimised. Swarf and other debris should be removed. To maintain optimum performance and minimise bacterial spoilage, machine tool coolant systems should be cleaned on a regular basis.

**Conditions for safe storage, including any incompatibilities**

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. Store locked up. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/ containers designed for use with this product. 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.

**Not suitable**

Prolonged exposure to elevated temperature

# Section 8. Exposure controls/personal protection

## Control parameters

### Occupational exposure limits

| Ingredient name | Exposure limits |
|---|---|
| Ethylene glycol | **NZ HSWA 2015 - GRWM 2016 (New Zealand).** WES-Ceiling: 50 ppm Issued/Revised: 9/2010 Form: Vapour and mists WES-Ceiling: 127 mg/m³ Issued/Revised: 9/2010 Form: Vapour and mists |
| disodium tetraborate, anhydrous | **NZ HSWA 2015 - GRWM 2016 (New Zealand).** WES-TWA: 1 mg/m³ 8 hours. Issued/ Revised: 11/2020 |

### Biological exposure indices

No exposure indices known.

**Recommended monitoring procedures**

Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls**

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

**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.

## 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 protection**

Undiluted fluid: Chemical goggles.
Diluted fluid: Safety glasses with side shields.

**Hand protection**

Wear chemical resistant gloves. Recommended: Butyl gloves. Neoprene gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

**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.

## Section 8. Exposure controls/personal protection

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment.
For protection against metal working fluids, respiratory protection that is classified as “resistant to oil” (class R) or oil proof (class P) should be selected where appropriate. Depending on the level of airborne contaminants, an air-purifying, half-mask respirator (with HEPA filter) including disposable (P- or R-series) (for oil mists less than 50mg/m3), or any powered, air-purifying respirator equipped with hood or helmet and HEPA filter (for oil mists less than 125 mg/m3).
Where organic vapours are a potential hazard during metalworking operations, a combination particulate and organic vapour filter may be necessary.
The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

**Appearance**

**Physical state** Liquid.

**Colour** Blue. Green.

**Odour** Characteristic.

**pH** 7.1 to 7.3 [Conc. (% w/w): 100%]

**Melting point/freezing point** Not available.

**Boiling point, initial boiling point, and boiling range** >165°C (>329°F)

**Drop Point** Not available.

**Flash point** Open cup: >120°C (>248°F) [Cleveland]

**Auto-ignition temperature**

| Ingredient name | °C | °F | Method |
|---|---|---|---|
| Ethylene glycol | 398 | 748.4 | |

**Lower and upper explosion limit/flammability limit** Lower: 3%
Upper: 15%

**Vapour pressure** ≤0.01 kPa

**Relative vapour density** Not available.

**Density** >1000 kg/m³ (>1 g/cm³) at 20°C

**Solubility(ies)**

| Media | Result |
|---|---|
| water | Soluble |

**Viscosity** Kinematic: 20 to 30 $mm^2/s$ (20 to 30 cSt) at 20°C

**Particle characteristics**

**Median particle size** Not applicable.

## Section 10. Stability and reactivity

**Chemical stability** The product is stable.

**Possibility of hazardous reactions** Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerisation will not occur.

**Conditions to avoid** Avoid all possible sources of ignition (spark or flame).

**Incompatible materials** Reactive or incompatible with the following materials: oxidising materials.

**Hazardous decomposition products** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

# Section 11. Toxicological information

## Information on likely routes of exposure

**Inhalation** Vapour inhalation under ambient conditions is not normally a problem due to low vapour pressure.

**Ingestion** Harmful if swallowed. Ethylene glycol: Ingestion of ethylene glycol can cause metabolic acidosis, kidney damage, central nervous system depression, and convulsions. The estimated human lethal dose is approximately 100 ml (3.4 ounces for an adult).

**Skin contact** No known significant effects or critical hazards.

**Eye contact** No known significant effects or critical hazards.

## Symptoms related to the physical, chemical and toxicological characteristics

**Inhalation** May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.

**Ingestion** Adverse symptoms may include the following:
nausea or vomiting
reduced foetal weight
increase in foetal deaths
skeletal malformations

**Skin contact** No specific data.

**Eye contact** No specific data.

## Potential chronic health effects

**General** May cause damage to organs through prolonged or repeated exposure. (kidney)

**Inhalation** Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

**Ingestion** Not applicable.

**Skin contact** Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Eye contact** No known significant effects or critical hazards.

**Carcinogenicity** No known significant effects or critical hazards.

**Mutagenicity** No known significant effects or critical hazards.

**Teratogenicity** May damage the unborn child.

**Developmental effects** Birth defects and decreased fetal weight have been observed in laboratory animals fed ethylene glycol in large amounts repeatedly during pregnancy.

**Fertility effects** No known significant effects or critical hazards.

## Numerical measures of toxicity

### Acute toxicity estimates

| Route | ATE value |
|---|---|
| Oral | 524.2 mg/kg |

# Section 12. Ecological information

**Ecotoxicity** No known significant effects or critical hazards.

## Persistence and degradability

Expected to be biodegradable.

## Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| Ethylene glycol | -1.36 | - | low |
| disodium sebacate | -4.9 | - | low |
| disodium tetraborate, anhydrous | -1.53 | - | low |

## Mobility in soil

**Mobility** Spillages may penetrate the soil causing ground water contamination.

## Section 12. Ecological information

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

**Other ecological information** Miscible in water.

## Section 13. Disposal considerations

**Disposal methods** The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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. Diluted Fluid Diluted fluid should not be discharged into sewage systems unless provided for by local regulations. Dispose under conditions approved by the local authority or via a licensed waste disposal contractor. The spent diluted fluid comprises a relatively stable emulsion. Dispose of via an authorised person/ licensed waste disposal contractor or by other suitable waste treatment techniques (e.g. emulsion splitting, coagulation and filtration) approved by the local authority. Spent fluid should never be disposed of down the drain. The aqueous phase should not be discharged into sewage systems unless provided for by local regulations; the non-aqueous phase should be disposed of as undiluted fluid. Note that separated aqueous solutions or effluents may contain metal salts as well as traces of oil and must be checked for conformity in these respects against consents given by the authorities before disposal. Further treatment may be required.

## Section 14. Transport information

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|---|---|---|---|---|---|---|
| New Zealand Class | Not regulated. | - | - | - | | - |
| ADG Class | Not regulated. | - | - | - | | - |
| IATA Class | Not regulated. | - | - | - | | - |
| IMDG Class | Not regulated. | - | - | - | | - |

PG* : Packing group

## Section 15. Regulatory information

**New Zealand Regulatory Information**

**HSNO Approval Number** HSR002606

**HSNO Group Standard** Lubricants, Lubricant Additives, Coolants and Anti-freeze Agents (Subsidiary Hazard) Group Standard 2020

**HSNO Classification** ACUTE TOXICITY (oral) - Category 4
REPRODUCTIVE TOXICITY - Category 1
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

**Regulation according to other foreign laws**

**REACH Status** For the REACH status of this product please consult your company contact, as identified in Section 1.

**United States inventory (TSCA 8b)** All components are active or exempted.

# Section 15. Regulatory information

| | |
|---|---|
| **Australia inventory (AIIC)** | At least one component is not listed. |
| **Canada inventory status** | At least one component is not listed. |
| **China inventory (IECSC)** | All components are listed or exempted. |
| **Japan inventory (CSCL)** | All components are listed or exempted. |
| **Korea inventory (KECI)** | All components are listed or exempted. |
| **Philippines inventory (PICCS)** | All components are listed or exempted. |
| **Taiwan Chemical Substances Inventory (TCSI)** | All components are listed or exempted. |

# Section 16. Other information

**History**

| | |
|---|---|
| **Date of issue/Date of revision** | 3 January 2024 |
| **Date of previous issue** | 18 August 2023. |
| **Version** | 3.02 |
| **Prepared by** | Not available. |
| **Key to abbreviations** | Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1 |

**Notice to reader**

**Indicates information that has changed from previously issued version.**

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