# Section 6.2 HACCP - Spirits

6.2.1 Product Description - Spirits

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| **Product Name:** | Spirits |  |
| **Description** | Spirits are alcoholic beverages consisting of a potable alcoholic distillate, produced by distillation of fermented liquor derived from food sources. They may have water, sugars, honey and/or spices added during production. A food that is sold as a spirit must contain at least 37% alcohol by volume. | |
| **Variant Examples** | Vodka, Gin, Rum, Tequila, Whisky, Brandy etc | |
| **Product use** | Direct consumption  Culinary use | |
| **Intended customers** | General public – Adults  (Not intended for children and pregnant women) | |
| **Potential for Abuse** | Negligible; products are shelf stable. | |
| **Ingredients** | Alcoholic distillate, water, sugars, honey and/or spices. | |
| **Product Storage Requirements and Display Shelf Life** | Spirits are shelf stable can be stored in ambient conditions. | |
| **Preparation and serving** | Products are all ready to eat (drink), typically served mixed with a non-alcoholic beverage (mixer). | |
| **Packaging** | Bottles | |
| **Transport Conditions** | Ambient | |
| **Labelling** | Designed to meet the requirements of the Food Standards Code (Parts 1 and 2) – as applicable | |
| **Regulatory Limits – Food Standards Code** | Food Standards Code   * General labelling requirements * Standard 2.7.1 Labelling of alcoholic beverages * Composition of spirits as specified in Standard 2.7.5 * Permitted additives and level of use as specified in Schedule 1 of Standard 1.3.1 Permitted processing aids and level of use as specified in Schedule 1 of Standard 1.3.3 | |

6.2.2 Identification of Hazards from Inputs

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| **Inputs** | **Description/Specification** | **Biological Hazard (B)** | **Chemical Hazard (C)** | **Physical Hazard (P)** |
| Clean water | Complies with the requirements defined in the Food Notice - Requirements for Food Control Plans & National Programmes | None | None | None |
| Yeast | Suitable for food use | None | None | None |
| Grain | Suitable for food use  Sourced from an approved supplier | Enteric pathogens (e.g., *Salmonella* spp.) | Residues of agricultural chemicals (e.g., pesticides, fungicides)**1** | None |
| Additives (e.g., preservatives, fining agents) | Food grade.  Permitted for use in spirits and used within limits specified in standard 1.3.1 of the Food Standards Code. | None | Sulphite**2**  Allergen’s from fining agents with animal protein derivatives**3** | None |
| Spices  Other Botanicals | Food grade  Not prohibited or restricted plant or fungi | Bacterial pathogens (e.g., *Salmonella* spp., *Bacillus* spp., *Clostridium* spp.) | None | None |
| Other foods e.g., sugar, honey | Food grade | Bacterial pathogens (e.g., *Clostridium* spp.) | None | None |
| Flavourings | Food grade | None | None | None |
| Bottles and closures | Food grade | None | None | None |
| Used (reuse) bottles | Sanitised | Bacterial pathogen | Chemical or non-food suitable residues | Foreign matter (e.g., metal) |

1. Grains may contain residues of agricultural chemicals, but fruits that are sourced from suppliers that comply with good agricultural practices (GAP) have been considered to meet the requirements of the Food Notice - NZ Maximum Residue Limits for Agricultural Compounds, as such chemical residues were not considered any further in the hazard analysis above.
2. Sulphite can induce asthma in susceptible individuals.

6.2.3 Process Flow - Spirits

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| **Inputs** | **Process Step** | **Outputs** |
|  | Purchasing |  |
| Raw Materials:   * Grain * Yeast * Additives / preservatives * Packaging | 2.  Receiving |  |
|  | 3.  Storing |  |
| * Grain | 4.  Milling |  |
| * Water * Grain * Yeast | 5.  Brewing | * spent grain |
|  | 6.  Fermentation | * Yeast harvested and/or waste |
| * Botanicals * Ethanol | 7. Maceration / Steeping |  |
| * Additives (Botanicals) | 8.  Distillation | * 'Heads' (1st cut) and 'Tails' (3rd cut) |
| * Filter agents | 9. Filtering |  |
| * ‘Heart’ (2nd cut) of run * Ethanol | 10. Addition of alcohol |  |
| * Spirit liquor | 11. Maturation / storage |  |
| * Packaging (Bottles and closures) | 12. Packaging |  |
|  | 13. Storing |  |
|  | 14. Dispatch / Transport | - Packaged spirits |

6.2.4 Process Hazard Analysis - Spirits

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| **Process** | **Inputs** | **Hazard reasonably likely to occur on or in the product at this step** | **Justification** | **Q1. Is there a control measure(s) for the hazards at this step?** | **Q2. Is this step a CCP?** |
| 1. Purchasing | All food and product contact raw materials | See Section 6.1.3 | Hazard from raw materials not meeting regulatory requirements. | Yes – The Company operates an Approved Supplier Programme. | No |
| 2. Receiving | All food and product contact raw materials | B – Enteric pathogens | Refer to 6.1.2 | Not applicable | No |
| 3. Storing | All food and product contact raw materials | B – Enteric pathogens | Hazards from poor storage methods / environment. | Yes – refer Section 2.2.2 Storage of Raw Materials. | No |
| 4. Milling | Grains | B – Enteric pathogens | Hazards carried from previous step | None | No |
| 5. Brewing | Grain, Water | B – Enteric pathogens | Hazards carried from previous step | Yes – Boiling of mix in kettle will eliminate vegetative pathogens. | No |
| 6. Fermentation | Grain, yeast, water | None | Hazards carried from previous step | Not applicable | No |
| 7. Maceration / Steeping | Botanicals | B – Enteric pathogens | Hazards carried from previous step | Not applicable | No |
| 8. Distillation | Alcoholic distillate | None | None | Yes – distillation process will eliminate vegetative pathogens. | No |
| 9. Filtering | Filter agent | None | None | Not applicable | No |
| 10. Addition of alcohol | Ethanol | None | None | Not applicable | No |
| 11. Maturation / storage | Unpackaged spirit liquor | None | None | Not applicable | No |
| 12. Packaging | Glass bottles | P – Glass fragments | Incorrect filler operation can result in chipping | Yes – correct equipment set-up and maintenance, observation during filling and filtration of product. | No |
| 13. Storage | Packaged spirits | None | None | Not applicable | No |
| 14. Dispatch and Transport | Packaged spirits | None | None | Not applicable | No |

6.2.5 Critical Control Points

A Critical Control Point (CCP) is a step at which an identified hazard can be eliminated or reduced to an acceptable level. Control at the CCP must be linked to the achievement of an established food safety outcome (i.e., product or process criteria). A CCP must have a defined critical limit which is measurable and capable of being monitored on a real time basis so that immediate corrective action can be undertaken.

6.2.6 Food Safety - Spirits

Spirits are generally considered as intrinsically safe given appropriate handling and hygiene conditions have been employed in its manufacture. This is due to the variety of “hurdles” that exist to achieve control of product safety both intrinsic and extrinsic. Hurdles include fermentation, distillation, significant presence of ethanol and lack of nutrients. Supporting these hurdles are the pre-requisite good operating practices ensuring appropriate hygiene conditions are maintained throughout the process.