

## **Product: Hooligan**

**Class:** Pre-workout

**Flavors available:** Orange Mango and Strawberry Margarita

**Serving size:** 20 servings

**Product Summary:** Hooligan is a well-rounded pre-workout made with the highest quality ingredients at clinically proven doses to achieve energy, focus, and pump. Hooligan is a 100% legal pre-workout, so it is great for athletes and professionals that are subject to drug testing. Hooligan should be used by bodybuilders and endurance athletes of all sports looking to maximize their higher repetition and exhausting workouts.

### **Ingredient details:**

**Niacin (30mg)** helps blood vessels dilate, which increases blood flow throughout the body. This gives an extra “pump” for a demanding workout.

**L-citrulline L-malate (6,000mg)** supplementation results in reduced fatigue and improved endurance for both aerobic and anaerobic prolonged exercise. L-citrulline is an amino acid. It is turned into L-arginine in the kidneys after supplementation, which means L-citrulline supplementation is a more effective method of increasing L-arginine levels in the body than L-arginine supplementation. The only difference between L-citrulline and citrulline malate (CM) is the addition of malic acid. That may seem like a minor detail, but it can have a significant impact on performance. Malate serves as an important component in the tricarboxylic (or TCA) cycle, which is one way your body produces energy. When malate levels are increased, so is energy production. Therefore, citrulline malate provides the one-two punch of bringing additional blood—and subsequently, oxygen and nutrients—to exercising muscles, as well as providing increased energy to boost performance levels.

**Beta Alanine as CarnoSyn® (3,000mg)** when ingested turns into the molecule carnosine, which acts as an acid buffer in the body. Beta-alanine has been shown to enhance muscular endurance. Beta-alanine supplementation can also improve moderate- to high-intensity cardiovascular exercise performance, like rowing or sprinting. Be wary if you don't see CarnoSyn® on the label! You may be consuming just regular L-alanine or something altogether different.

**L-leucine (2,000mg)** is one of the three BCAAs and is sometimes referred to as the 'main' amino acid since the most popular benefit of BCAAs (muscle building) is primarily due to leucine. Leucine is an activator of the protein known as mTOR, which induces muscle protein synthesis. The studies assessing leucine mostly look at muscle protein synthesis when additional leucine is added to the diet or to a test meal, and it appears that leucine is able to reliably increase muscle protein synthesis after test meals.

**Creatine HCl (2,000mg)** works well because adding the hydrochloride group to the creatine molecule lowers the pH of creatine, making it more acidic. This drastically increases its solubility in fluids. Research shows that when subjects consume the same amounts of creatine HCl and creatine monohydrate, the creatine HCl is absorbed by the intestines around 60% better than creatine monohydrate. This means that a much smaller dose of creatine HCl is needed to get similar results to a bigger dose of creatine monohydrate. With greater solubility in fluid, greater absorption by the intestines and with a much smaller dose, the chance of stomach issues and subcutaneous water retention are significantly reduced.

**Agmatine Sulphate (1,000mg)** Research shows that agmatine is very effective in the inhibition of the nitric oxide synthase (NOS) in the body, reducing the amount of toxic nitric oxide levels. The enzyme that produces agmatine in the body increases during stressful times; this means that it is the natural response of the body to protect itself from anxiety. Agmatine increases the activity of neurons in the areas of the brain associated with the handling of stressors, such as high intensity exercise.

**Choline Bitartrate (1,000mg)** is a molecule mostly used for either its cognitive boosting properties (turning into acetylcholine, the learning neurotransmitter) or delaying muscle fatigue in endurance sports.

**L-Tyrosine (750mg)** is used by strength athletes because of their supposed effect of activating metabolic pathways. However, oral supplementation of tyrosine by humans has been shown to improve stress-induced cognitive and behavioral deficits, in particular working memory, and stress-sensitive focus tasks. Extended exercise is associated with central metabolic and neuroendocrine changes that may ultimately result in fatigue.

**Caffeine (600mg)** is the equivalent of 6.32 8oz cups of coffee.

**Hordenine (50mg)** can be used as a stimulant and fat burner due to its associated with tyramine and noradrenaline.

**Piper nigrum (fruit) extract as Bioperine® (5mg)** Helps increase the bioavailability of supplemental nutrients by enhancing absorption.

**Yohimbine (4mg)** works by increasing adrenaline levels in the body, as well as inhibiting a regulatory process in fat cells, which normally suppresses fat burning.

**Huperzine (50mcg)** is a cognitive enhancer that inhibits an enzyme that degrades the learning neurotransmitter, acetylcholine; due to this, a relative increase occurs.