

# Synthetic, Laboratory-Grown Diamond Truths: ECO/ENVIRONMENTAL CLAIMS

TRUTH

# 1

Most eco-claims made by laboratory-grown diamond (LGD) manufacturers are **unsubstantiated and in violation of U.S. federal guidelines.**

Many LGD manufacturers claim their products are environmentally friendly but do not provide evidence to support their claims. The Federal Trade Commission (FTC) sent a letter to eight LGD manufacturers, warning them not to make any more unqualified environmental benefit claims, including using terms like “environmentally friendly” and “sustainable”.

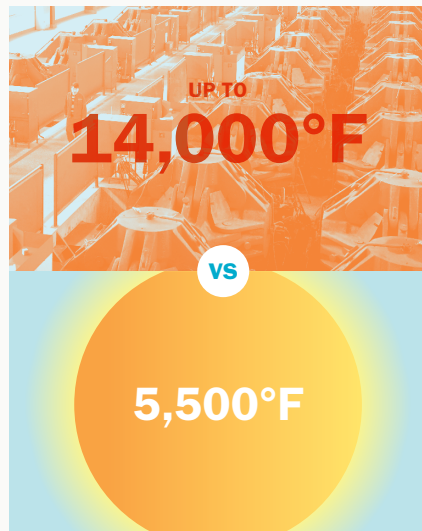


TRUTH

# 2

LGDs involves **massive amounts of energy.**

Unlike with natural diamonds, which are billions of years old and have taken millions of years to come to the earth's surface, LGDs require massive amounts of energy to manufacture in over just a few weeks using chemical reactors that burn at up to 14,000 degrees Fahrenheit. By comparison, the surface of the sun is only 5,500 degrees Fahrenheit.

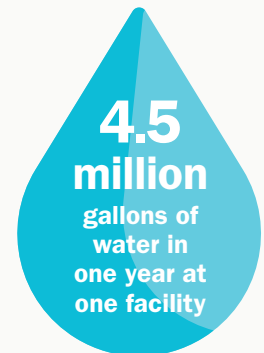


TRUTH

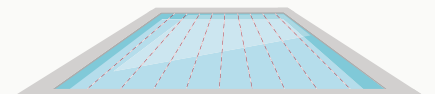
# 3

LGDs require a **significant amount of freshwater to manufacture.**

Excessive heat from the reactors used to manufacture LGDs requires a large volume of freshwater to help prevent them from overheating. One LGD producer reports requiring up to 4,500,000 gallons per year to cool its reactors in one of its factories. That's enough water to fill nearly seven Olympic-sized swimming pools.



**That's 7 Olympic-sized  
swimming pools**



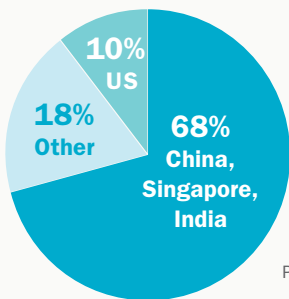
# Synthetic, Laboratory-Grown Diamond Truths: ECO/ENVIRONMENTAL CLAIMS

TRUTH  
**4**

Compared with natural diamonds, **LGDs on average generate 3 times the amount of carbon emissions on a per carat basis.**

The Chemical Vapor Deposition (CVD) and High Pressure High Temperature (HPHT) processes emit an average of 511kg of carbon per polished carat of LGD, according to estimates compiled by Trucost, an independent firm that is a part of S&P Global. By comparison, it takes an average 160kg of carbon to produce 1 carat of polished natural diamond.

**LGD PRODUCTION BY COUNTRY**  
(of at least 0.3 carats of gem-quality)



Source:  
Paul Zimmisky  
Research

TRUTH  
**5**

Some LGD manufacturers **make claims of carbon neutrality by buying carbon offsets, not through sustainable operations.**

LGD manufacturers use carbon intensive fossil fuels to power their manufacturing facilities. Some of these producers say their process is carbon neutral because they get power from renewable energy; however, upon further review, these companies get energy from fossil fuel fired power plants, then purchase carbon offsets. It is in reality not economically, technically and environmentally viable to heat LGD reactors using renewable energy.

**PRODUCT COMPARISON**

Greenhouse Gas Emissions per Item (kg CO2e)

