

# NUGEN® 1ID

## One Ingredient Disinfectant



### Industry Growth



- Growth in office space and hotel occupancy is generating increased demand for general disinfectant cleaners.<sup>1,2</sup>
- Multi-purpose cleaners/disinfectants expected to remain the largest product type for I&I cleaning chemicals through 2020, due to their widespread use across a variety of markets.<sup>1</sup>

### Current Market Trends & Drivers

- Increased demand for ingredient transparency driven by both consumers and states.
- Increasing State Regulatory Compliance. Recent NY and CA laws enacted with MN, OR, and MD pending<sup>3</sup>
- Material costs are rated #2 in overall top market challenges for manufacturers. Price reduction pressures are also in the top 5 market challenges for manufacturers.<sup>4</sup>

### Risks & Operational Costs

- Penalties may be imposed for noncompliance with state ingredient transparency laws.<sup>3</sup>
- Inventory carrying costs run generally between 20% – 30% of the cost of the actual inventory.<sup>5</sup>
- This includes capital cost, storage space cost, handling cost, and inventory risk cost.<sup>6</sup>



## Case Studies in Lean Manufacturing

### DOW Chemical

- Began implementing lean manufacturing 1998<sup>7</sup>.
- Average age of inventory for agricultural chemicals lowered by 10%<sup>7</sup>
- Employee productivity has increased by more than 8% per year.<sup>7</sup>
- Revenue growth, cost reductions, and asset utilization from Six Sigma/lean manufacturing totaled \$1.5 billion in EBIT within 4 years of implementation.<sup>8</sup>

### John Deere

- Implemented lean manufacturing in 2003 to identify non-value added activities (waste) and eliminate them where possible.
- Reduced inventory by 28% in twelve months, saving millions in inventory carrying costs.<sup>10</sup>
- Raw castings and finished parts inventory reduced from 40 days to 2 days of inventory.<sup>10</sup>
- Since implementation, has achieved close to double digit productivity gains every year, at an average of 8-9%.<sup>11</sup>

## 8 Wastes

The 8 Wastes are eight types of process obstacles that get in the way of providing value to the customer.



### Defects

Efforts caused by rework, scrap, and incorrect information.



### Overproduction

Production that is more than needed or before it is needed.



### Waiting

Wasted time waiting for the next step in a process.



### Non-Utilized Talent

Underutilizing people's talents, skills & knowledge.



### Transportation

Unnecessary movements of products & materials.



### Inventory

Excess products and materials not being processed.



### Motion

Unnecessary movements by people (e.g., walking).



### Extra-Processing

More work or higher quality than is required by the customer.



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« Only One Ingredient. »



## A New Way: ONE Ingredient Disinfection

- NUGEN® 1ID disinfectant is only ONE ingredient – ONE ingredient means:
  - Shift from 5 or more ingredients to ONE, **lowering COGS and increasing margins.**
  - **Less waste**, saving the manufacturer money.
  - **Less inventory carrying costs**, eliminating the need for additional ingredient inventory.
  - Manufacturer can **sell more product** by decreasing the customer's **cost**.  
**Sell more product = make more money.**
  - **Faster manufacturing**, reducing mixing times and **cost** as only one ingredient is required.
  - **Lower end use costs for the customer**, with hospital disinfection at only 474 ppm of active.

## Features and Benefits

Product Feature	Customer Benefit
One ingredient – Carboquat H®	<ul style="list-style-type: none"> <li>- Saves on inert raw material costs</li> <li>- Reduces manufacturing cost &amp; complexity</li> </ul>
Less harsh chemicals	<ul style="list-style-type: none"> <li>- Easier transparency</li> <li>- Improved safety profile</li> <li>- Cleaner labels</li> </ul>
16 pathogen claims	<ul style="list-style-type: none"> <li>- Disinfection against a variety of pathogens at an economical price point</li> </ul>
Multiple application methods	<ul style="list-style-type: none"> <li>- Mop 'N' Bucket and spray</li> </ul>
1:32 and 1:64 dilutions	<ul style="list-style-type: none"> <li>- Economical cost-in-use for end users</li> </ul>

## Label Claims

### NUGEN® 1ID Efficacy Claims

#### Disinfection

Contact time: 10 minutes – Soil Load: 5%

#### Bacterial claims

Enterobacter aerogenes

Escherichia coli

Klebsiella pneumonia

Pseudomonas aeruginosa

Salmonella enterica

Serratia marcescens

Shigella flexneri

Shigera sonnei

Staphylococcus aureus

Methicillin Resistant Staphylococcus aureus [MRSA]

Staphylococcus epidermidis

Streptococcus pyogenes [Strep]

#### Viral Claims

Herpes Simplex Type 1 [Herpes]

HIV-1

Influenza A/Hong Kong [Influenza]

#### Fungi

Trichophyton interdigitale [Athlete's Foot]

## Application Areas

- Institutional & Industrial (I&I)
- Janitorial
- Consumer

## Regulatory Status

Formulation Name	EPA Registration
NUGEN® 1ID-32	6836-386
NUGEN® 1ID-64	6836-387

See EPA label and SDS for specifics on use sites and PPE requirements.

« The single ingredient disinfecting solution. »

<sup>1</sup> Freedonia: Industrial and Institutional Cleaning Chemicals – <https://www.freedonia-group.com/industry-study/industrial-and-institutional-ii-cleaning-chemicals-3646.htm>

<sup>2</sup> IBISWorld: Janitorial Services Industry in the US – <https://www.ibisworld.com/united-states/market-research-reports/janitorial-services-industry/>

<sup>3</sup> Milwaukee Business Journal: How the “Cleaning Product Right to know Act” Affects Your Business – <https://www.bizjournals.com/milwaukee/news/2018/04/01/how-the-cleaning-product-right-to-know-act-affects.html>

<sup>4</sup> IndustryWeek: The Future of Manufacturing; 2020 and Beyond – [https://www.nist.gov/sites/default/files/documents/2016/11/16/iw\\_kronos\\_research\\_report\\_2016.pdf](https://www.nist.gov/sites/default/files/documents/2016/11/16/iw_kronos_research_report_2016.pdf)

<sup>5</sup> Investopedia: Carrying Cost Of Inventory – <https://www.investopedia.com/terms/c/carryingcostofinventory.asp>

<sup>6</sup> The Balance Small Business: Inventory Carrying Costs – <https://www.thebalancesmb.com/inventory-carrying-costs-2221373>

<sup>7</sup> Dow Chemical Company – Six Sigma: <https://www.isixsigma.com/industries/chemicals/dow-chemical-company-six-sigma>

<sup>8</sup> Applying Six Sigma Methodology to Energy-Saving Projects: [https://texasiof.ceer.utexas.edu/texasshowcase/pdfs/casestudies/cs\\_dow\\_sixsigma.pdf](https://texasiof.ceer.utexas.edu/texasshowcase/pdfs/casestudies/cs_dow_sixsigma.pdf)

<sup>9</sup> Global Manufacturing: Top 10: Lean manufacturing companies in the world – <https://www.manufacturingglobal.com/top-10/top-10-lean-manufacturing-companies-world>

<sup>10</sup> Moving To Lean Manufacturing – <https://www.mmsonline.com/articles/moving-to-lean-manufacturing>

<sup>11</sup> John Deere: A Case Study for Lean Manufacturing – [http://cmuscm.blogspot.com/2013/09/john-deere-case-study-for-lean.html?sm\\_au=iV5Zw1B5Nw2QV6Tv7BHkK7ssf464](http://cmuscm.blogspot.com/2013/09/john-deere-case-study-for-lean.html?sm_au=iV5Zw1B5Nw2QV6Tv7BHkK7ssf464)



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