

**EFFICIENT
MATTING.
ENHANCED
LONGEVITY.
UNRIVALED
DURABILITY.**

NduroMatt™ Micronized Matting Agents
for Paints and Coatings



Honeywell

IMPROVED COATING PERFORMANCE FOR LONGER SERVICE LIFE

Matte coatings are more prevalent than ever before, yet the requirements for durability and longevity remain the same. Conventional matting agents make coatings susceptible to surface defects such as burnish, mar, and scratch, negatively impacting the durability of matte paints and coatings. Honeywell's new NduroMatt™ provides a 2-3 fold improvement over conventional matting agents.



NDUROMATT™ MATTING AGENTS FOR COATINGS

Honeywell's NduroMatt product line consists of four product groups that offer a wide range of performance attributes for architectural, wood, industrial, and functional coatings. NduroMatt™ products can completely replace conventional matting agents or can be used to supplement matte coatings to enhance surface properties.

| PRODUCT | DESCRIPTION | PERFORMANCE ATTRIBUTES* | BURNISH RESISTANCE* | SCRUB RESISTANCE* | RUB/MAR RESISTANCE* | STORAGE STABILITY* |
|-----------------------|--|--|---------------------|-------------------|---------------------|--------------------|
| NduroMatt™ 100 series | For use in water or solvent-based, semi-gloss to flat paints and coatings, providing superior surface properties when compared to conventional matting agents. | Matting Efficiency | + | + | + | + |
| NduroMatt™ 200 series | For use in water or solvent based, semi-gloss to flat paints and coatings, that require an additional boost in surface properties over NduroMatt™ 100. | 50% faster incorporation** Limited or no foam and dust generation** | ++ | ++ | ++ | + |
| NduroMatt™ 300 series | For use in water based pigmented semi-gloss to flat paints and coatings, requiring a polar matting agent for ease of dispersion, and superior surface properties when compared to conventional matting agents. | Limited or no impact on viscosity** | ++ | ++ | ++ | ++ |

** Versus synthetic silica based matting agents.

+ Better than conventional matting agents.

++ Significantly better than conventional matting agents

* Burnish resistance test – MPI #139 (March 2018) modified with additional 500g weight and 250 cycles.

* Scrub resistance – Per MPI #60, March 2018 (referencing ASTM D2486-17).

* Rub/Mar resistance – Per modified MPI #139 (March 2018) Burnish resistance test, visual inspection of damaged surface.

* Storage stability – Stored at room temperature for 42 days, visual inspection of coating.

NDUROMATT™ PRODUCT GROUPS

Honeywell's NduroMatt products come in 6 micron to 18 micron particle sizes that are suitable to be used with coatings of various dry thickness. The varying sizes also allow customers to mix & match these products to achieve the most optimal visual as well as performance characteristics.

| PRODUCT | 18 MICRON | 12 MICRON | 6 MICRON |
|-----------------------|-----------|-----------|----------|
| NduroMatt™ 100 series | 100 | 101 | 102 |
| NduroMatt™ 200 series | 200 | 201 | 202 |
| NduroMatt™ 300 series | 300 | 301 | 302 |

EFFICIENT MATTING, ENDURING PROTECTION

Recommendation for 100% replacement of conventional matting agents:

| VALUE PROPOSITION | WATER-BASED ACRYLIC/VINYL | SOLVENT-BASED 2K POLYURETHANE | SOLVENT - BASED ALKYL |
|---------------------|---------------------------|-------------------------------|-----------------------|
| Matting Efficiency* | + | - | = |
| Burnish Resistance* | + | ++ | + |
| Rub/Mar Resistance* | ++ | ++ | ++ |
| Viscosity Control* | + | = | + |

- Slightly less efficient than conventional matting agents

= Is equal to conventional matting agents

+ Better than conventional matting agents

++ Significantly better than conventional matting agents

* Matting Efficiency - Measured using BYK Gardner Micro-Tri-Gloss Meter.

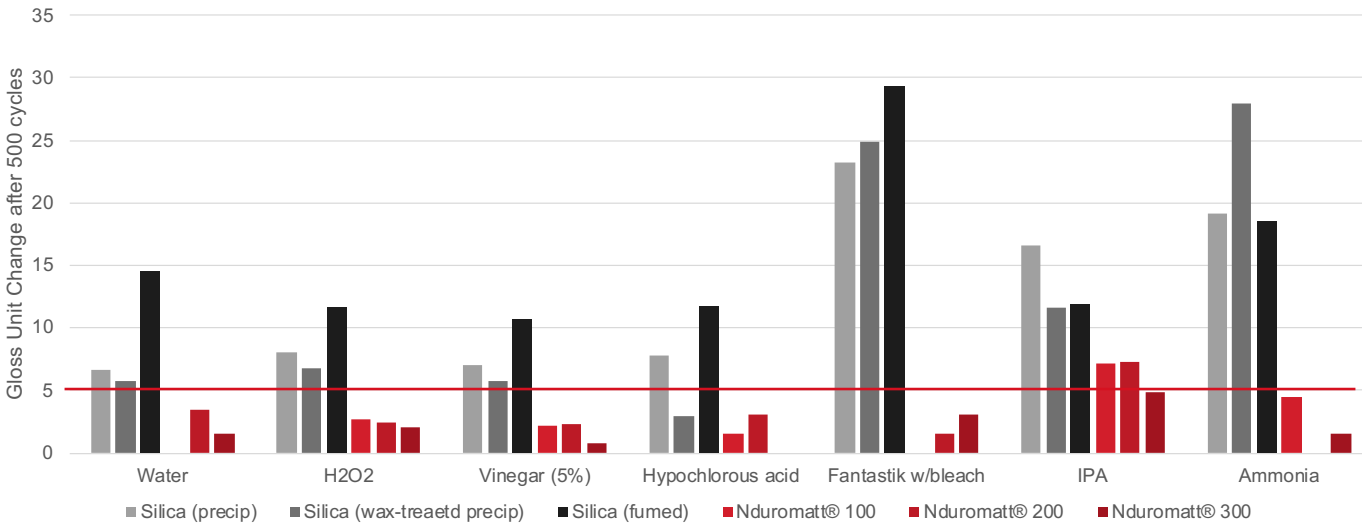
* Burnish resistance test - MPI #139 (March 2018) modified with additional 500g weight and 250 cycles

* Rub/Mar resistance - Per modified MPI #139 (March 2018) Burnish resistance test, visual inspection of damaged surface

* Viscosity Control - Viscosities are measured with a standard Brookfield Viscometer



ENDURABILITY OF MATTE FINISH - POST 500 CYCLES



Gloss readings are at 85° gloss angle using the BYK Gardner Micro-Tri-Gloss Meter.

5% w/w loading level post added in water-based acrylic coating.

Burnish tested after 200 cycles with 4 pounds (1.81 kgs) weight.

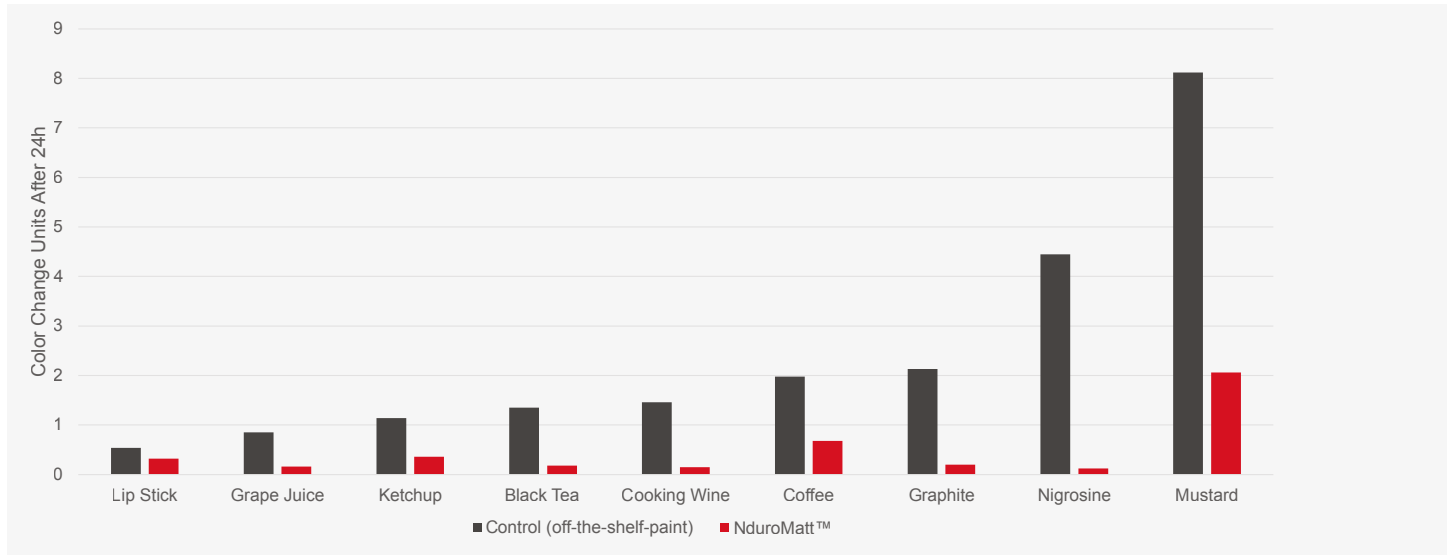
Test Conditions:

BYK Gardner abrasion/scrub tester, rayon pad, 200 cycles with an additional 500 grams of weight. Matting agent loading level 5% w/w in high gloss water based acrylic coatings.



NDUROMATT® STAIN RESISTANCE

Nduromatt®s resist the staining of even off-the-shelf paints



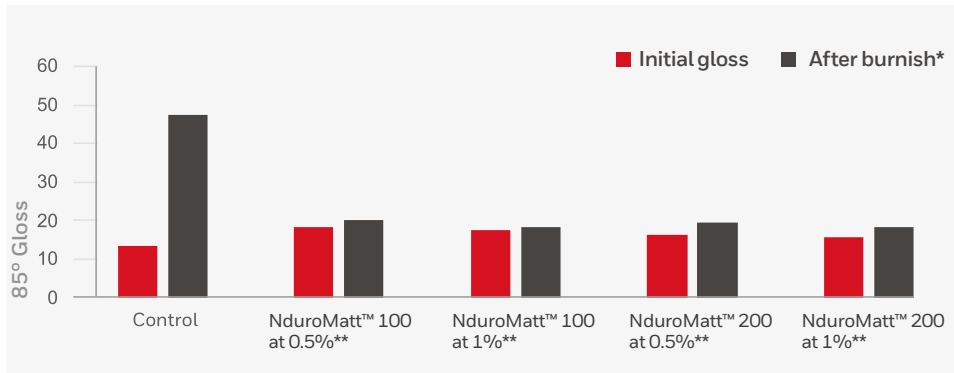
Recommendation for performance improvement of matte coatings matted with conventional matting agents (0.5 – 2% w/w, post add):

| VALUE PROPOSITION | WATER-BASED ACRYLIC/VINYL | SOLVENT-BASED 2K POLYURETHANE | SOLVENT-BASED ALKYD |
|---------------------|---------------------------|-------------------------------|---------------------|
| Burnish Resistance* | ++ | ++ | + |
| Rub/Mar Resistance* | ++ | ++ | ++ |
| Storage Stability* | = | = | = |

- = Is equal to conventional matting agents
- + Better than conventional matting agents
- ++ Significantly better than conventional matting agents

* Burnish resistance test – MPI #139 (March 2018) modified with additional 500g weight and 250 cycles
 * Rub/Mar resistance – Per modified MPI #139 (March 2018) Burnish resistance test, visual inspection of damaged surface
 * Storage stability – Stored at room temperature for 42 days, visual inspection of coating

Burnish resistance improvement with the addition of NduroMatt™ to matte coating.



* 400 cycles with 4 pounds (1.81 kgs) weight
 ** Post added w/w loading

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THE
 FUTURE
 IS
 WHAT
 WE
 MAKE IT

Honeywell