

# Protecting shipments from moisture damage

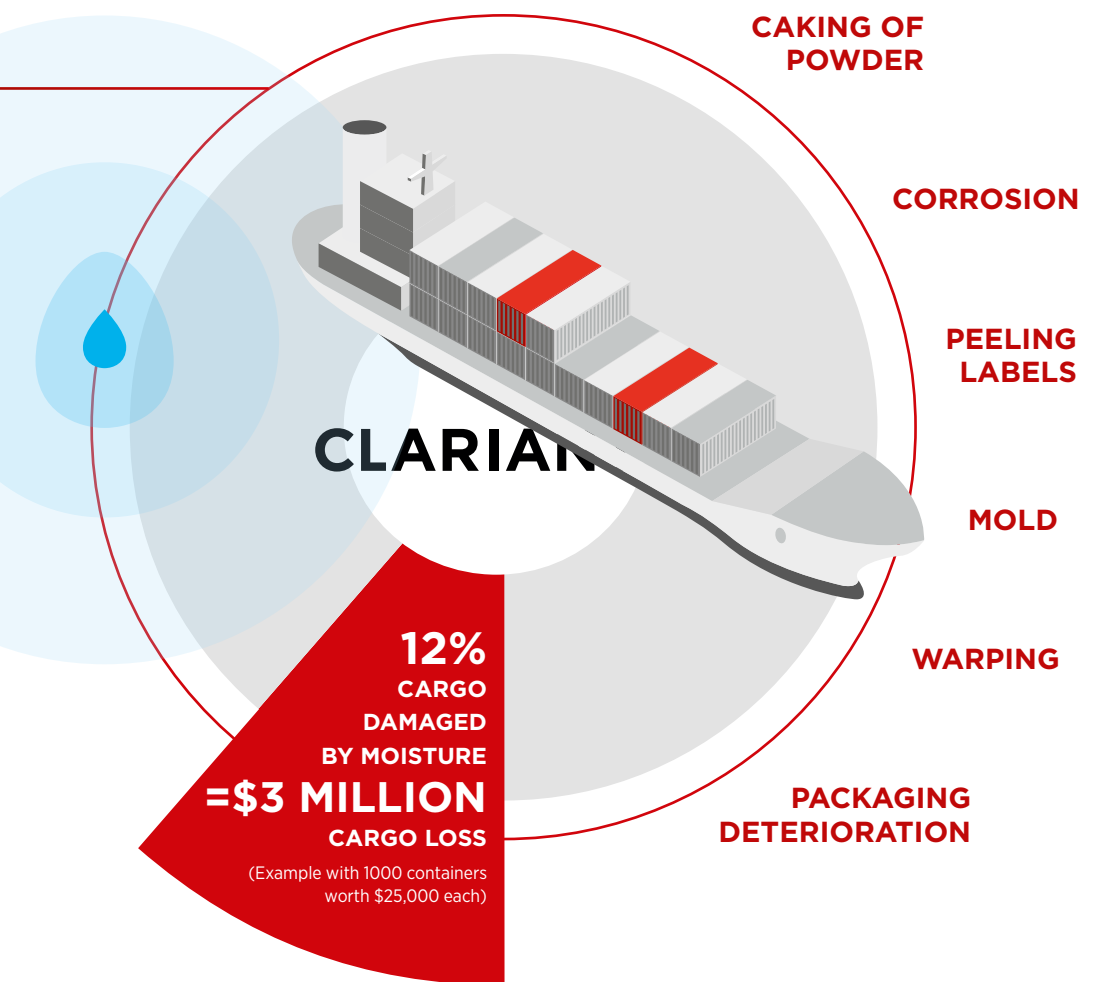
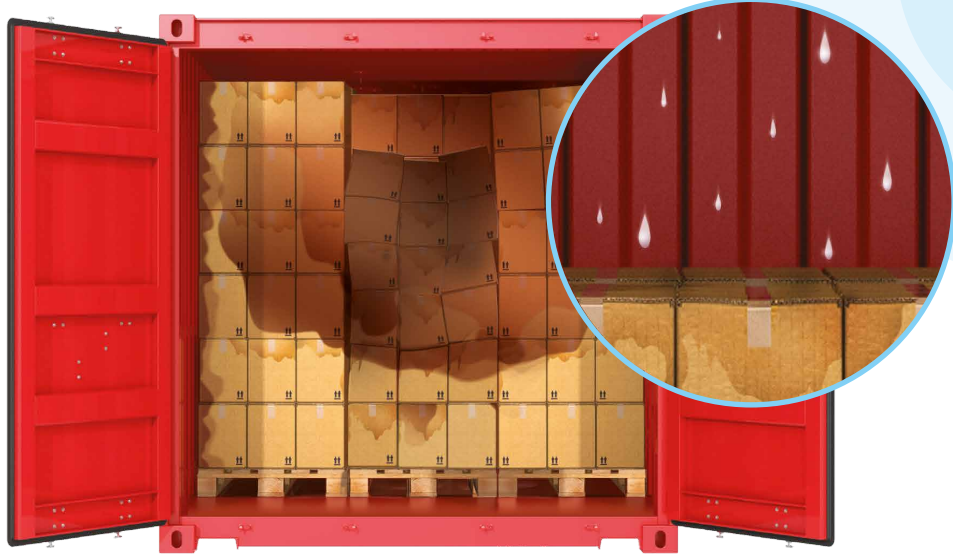
## CONTAINER DRI® II

CLARIANT 

### CARGO DAMAGED BY CONTAINER RAIN

Every day, at any given time, millions of containers are in transit across the ocean and are subject to extreme weather conditions.

Some of these containers will experience **container rain** which exposes the cargo to **moisture damage**.



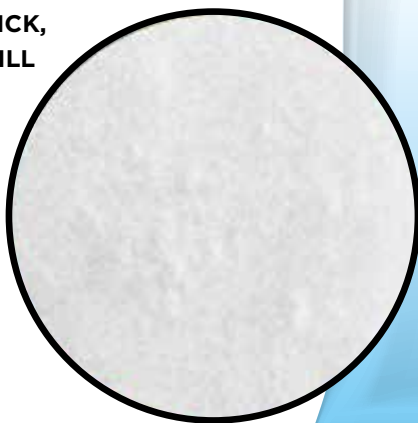
### WHAT IS CONTAINER RAIN AND HOW DOES IT HAPPEN?

- 1. HUMIDITY INSIDE CONTAINERS** from
  - loading in humid environments
  - products with high moisture content
  - packaging and dunnage with high moisture content
- 2. TEMPERATURE MAY DROP**
  - when shipped to colder climates
  - due to cold front
  - with day-to-night temperature fluctuations
- 3. CONTAINER RAIN RESULTS**
  - when the surface temperature of a container drops below the **dew point**, the moisture in the air inside the container will condense on the walls and ceiling, forming water droplets »**container rain.**« This cycle can repeatedly happen during an ocean voyage with every change in the weather.

### HOW TO CONTROL DEW POINT AND PREVENT CONTAINER RAIN WITH CARGO DESICCANT CONTAINER DRI® II

#### EXCEPTIONAL ABSORPTION CAPABILITIES

- Absorbs up to more than **300%** of its weight in moisture
- Traps moisture as a **THICK, NO-SPILL GEL**



Under certain conditions, approximate, absorption capacity of a 125 g bag: **> 400%** of its weight or approx **500 g H<sub>2</sub>O** at **95% relative humidity** and **40 °C**

The higher the moisture, the more aggressive the absorption

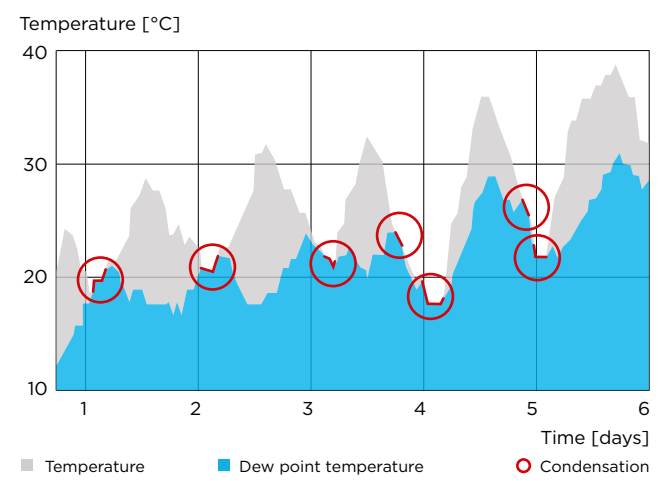
Its high performance enables more absorption with less desiccant, making it a cost effective and economical solution.

#### HOW?

As the cargo desiccant absorbs moisture it reduces the dew point below surface temperature, preventing condensation from forming on the walls of the container.

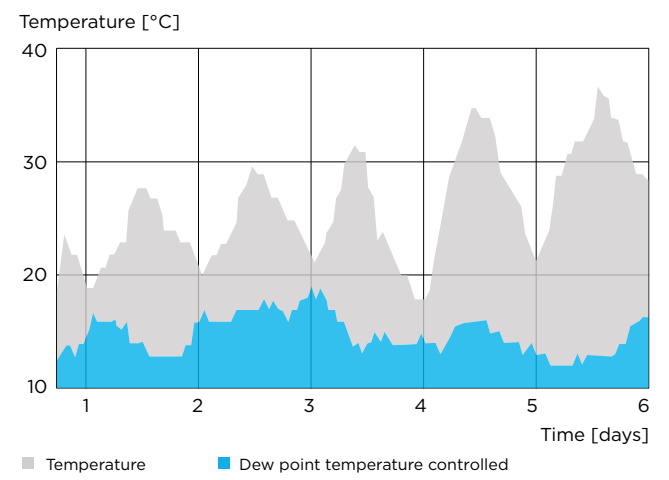
#### TRANSPORT WITHOUT DEW POINT CONTROL

Condensation occurs when surface temperature and dew point temperature are equal.



#### TRANSPORT WITH DEW POINT CONTROL

Dew point temperature is kept below surface temperature, preventing condensation and moisture damage.



Source: Clariant BU FM, Application and Development Dpt.

### CONTAINER DRI® II - EASY TO USE



#### VARIETY OF CONFIGURATIONS

- Carabiner and strap for hanging or suspending
- Hook design for easy hanging
- Adhesive strips for installation onto shipping walls
- Hard shell that can be hung or suspended
- Individual bags with or without adhesive backing
- Blanket that can be adhered to cargo or a cardboard slip

### SAVINGS AND BENEFITS OF USING CONTAINER DRI® II

-  **SIGNIFICANTLY REDUCES CARGO LOSS** due to moisture damage
-  **PROTECTS SHIPMENTS** from start to finish
-  **NON-TOXIC** Safe for contact with food products
-  **ABSORBS UP TO MORE THAN 3X** its weight in moisture
-  **INSTALLS IN MINUTES**
-  **EASY DISPOSAL**
-  **TRAPS MOISTURE** as a thick, no-spill gel
-  **SAVES COSTS** due to more absorption with less desiccant
-  **CLARIANT ECOTAIN® DISTINCTION IN SUSTAINABILITY** Container Dri® II carries the Clariant EcoTain® label for products with outstanding sustainability advantages

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Greater chemistry