



# HANSA ADD 1055

Wetting agent for plant protection formulations

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# Wetting agent for plant protection formulations

## Plant protection

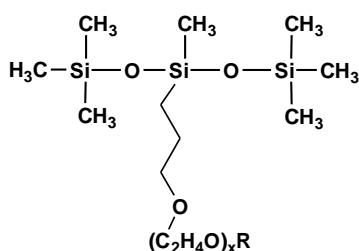
Man has always been cultivating plants that were used for consumption or for the production of textiles. To date, nothing has changed. On the contrary, cultivation of useful plants with increasing yield is becoming more important year by year. The nourishment of mankind is based almost entirely on plants, either by direct consumption or indirectly through the consumption of plant-eating animals and their products. Due to the growing world population, the area for growing crops is becoming scarce, the demand for food increases. Moreover, the use of renewable materials offers vast potential in the world and is essential for supplying the industry with raw materials for various industrial applications. <sup>[1]</sup>

Not only from the economic side, but mainly for means of assuring the world food, it is of utmost importance to prevent yield losses and quality losses particularly in intensive cultures. To minimize damage to crops by pests and as a result profit cuts, it is important to effectively protect them. The most common pests include weeds, fungi and insects. To improve the effectiveness of the used pesticides such as herbicides, fungicides and insecticides, it is important to evenly distribute the active components onto the plant surfaces.



The addition of suitable additives for improving the wetting behaviour of spray fluids on the leaves is unavoidable.

By decreasing the surface tension of water, already small amounts of suitable wetting and spreading agents allow for an effective, resource saving and homogeneous distribution of the active components. Over the last years polyether modified siloxanes have excelled as suitable wetting agent. Particularly trisiloxanes reduce the surface tension of water in a nearly incomparable way and in this way even surfaces that are hard to wet and areas that are hard to reach can be protected.



General structure of a polyether modified trisiloxane

## **HANSA ADD 1055**

With HANSA ADD 1055, CHT R. Beitlich GmbH has a new, optimised polyether modified trisiloxane. A spray liquid containing HANSA ADD 1055 guarantees a high wetting activity on many different leaf surfaces. HANSA ADD 1055 stands out from commonly used polyether siloxanes or trisiloxanes for its highly improved spreading which enables a reduction of the water absorption up to 40 %. This could be shown in the test complying with ASTM E20044-99.

### **Properties of HANSA ADD 1055**

- Surface tension of 21.5 mN/m (0.1 %)
- Slightly yellowish product with low viscosity
- Nonionic product
- Active content 100 %
- Additional amount is between 0.01 – 0.1 % (~ 0.1 l/ha).

### **Advantages of HANSA ADD 1055**

- Better wetting of the plant surfaces
- Homogeneous distribution of the spray liquid and quicker penetration into the plants
- Less water required
- Better rain resistance
- More effective absorption of systematic plant protection formulations
- Maximum effect with minimum application
- Better penetration of the active substance to areas that are hard to reach

[1] Dipl.-Phys. Michael Carus, Biomass in Future Landscapes DBFZ & ZALF, Berlin, March 31, 2009; Stoffliche Nutzung Nachwachsender Rohstoffe in Deutschland und weltweit

## Standard test method for examining the spreading behaviour of liquid plant protection agents according to ASTM E20044–99

For visualization and differentiation of the spreading behaviour of wetting agents in the agricultural sector, the relative spreading diameter of a test fluid is looked at. For this purpose, a 0.1 % solution of the wetting agent to be used is tested. The solution is dropped onto a piece of stretched Parafilm M3 with a micropipette and then the spreading drops are measured after 30 and 60 seconds. The larger the wetted surface, the better the efficiency of the applied wetting agent.

Test conditions:

- Test surface: Parafilm M3
- Temperature: 20°C
- Relative air humidity: 65 %
- Volume of the drops: 20 µl
- Total spreading time: 60 s
- Concentration: 0.1 % in de-ionised water

Product	Diameter after 30 s	Diameter after 60 s
Nonionic surfactant	6 mm	6 mm
Polyether siloxane	7 mm	8 mm
Trisiloxane	23 mm	29 mm
HANSA ADD 1055	24 mm	36 mm

