

KES

**Method of Copper-Accelerated
Acid-Salt Spray Test**

KES T – L068

(EST.) 1989 – 04 – 24

Contents

1. Scope of Application
2. Testing Equipment
3. Specimen
4. Testing Method
5. Evaluation Standard

Additional Rule



1. Scope of Application

This standard determines CASS test, which is a chrome plating rust-proof test method applied for plastic or metal phenomenon for vehicles.

2. Testing Equipment

The testing Equipment shall satisfy following conditions.

- (1) The equipment that is needed for this test consists of spray room, alkali water tank, compressed air supplier, spray nozzle, specimen stand, dust collector, air saturator, exhaustion system, heater and pressure/temperature controller. Follow the settlement established by our related department for the size of equipment and detail structure.(Refer to figure 1.)
- (2) The dissolution drops on the ceiling or the cap shall not fall on the specimen.
- (3) The falling drops from the specimen shall not leak into the alkali water tank and it shall be used again.
- (4) The equipment's material shall not affect the erosion of specimen.
- (5) The spray pressure shall be adjusted to $1 \pm 0.01 \text{ kgf/cm}^2$.

In order to spray alkali dissolution, there shall not be any dust or oil in the compressed air to be sent to the spray nozzle.

3. Specimen

- (1) According to the state of contamination, it shall be put in appropriate solvent, such as acetone, alcohol, and ethyl ether, and shall be washed by soft cloth or sponge. But, A solvent that can make the specimen erode or can form a film on the surface shall not be used.
- (2) The exposed parts that are not a section or effective surface shall be covered by a film

that can make it stable under the testing conditions.

(3) Handle the specimen with care.

(4) In order to remove the extracted salt on the specimen surface, wash the specimen with running water and dry it. The erosion residuum can be removed by brushing in order to observe the erosion of phenomenon metal, if needed.

4. Testing Method

This method is the test that is to know the rust proof level by spraying the test fluid made of acetate acid NaCl dissolution with chloride #2 copper added on the plated film by using CASS tester. The important conditions shall be as table 1.

Table 1. Important test conditions

Items	Standard	On test
NaCl Concentration (W / V %)	5	4.0 ~ 6.0
Chloride #2 copper concentration (g / ℓ)	0.26	—
PH	3.0	3.0 ~ 3.1
Spray Pressure (kg f / cm ²)	—	1.0 ± 0.01
Spraying Amount (ml / 80 cm ² / h)	—	1.5 ~ 2.0 ml
Air Tank temperature (°C)	—	65 ± 2 °C
Chamber temperature (°C)	50	50 ± 2°C

(1) Making Test Fluid

Make the test fluid as following order.

(a) Dissolve a reagent that corresponds to level 1 of KS M 8115 [NaCl (Reagent)] in distilled water or ion exchange non-salt water to be 5 ± 1 % (Weight).

(b) Dissolve 0.26 g of the best quality chloride #2 copper (Reagent) in 1ℓ of chloric dissolution.

- (c) Make chloric dissolution to be pH 3.0 ~ 3.1 at 25 °C by adding 0.1 ~ 0.3 % of special by KS M 8108 [Acetate acid (Reagent)]. Also, mix the chloric dissolution well before putting it in the chloric water tank, and there shall not be any unclear material or floating material in the chloric dissolution by filtering or taking superiority liquid.

Remarks⁽¹⁾ : Use more than 50×10^4 ohmcm for the non-salt water.

⁽²⁾ : The specific gravity 1.02555 ~ 1.0400 at 25 °C shall be appropriate for the dissolution.

(2) Specimen Spot

The specimen spot in the spray room shall satisfy following conditions.

- (a) Tilt the specimen's effective face by 20° from a vertical line. If this is not possible, tilt it by 15 ~ 30°.
- (b) Make them not contact each other and with anything else except the holder.
- (c) The specimen shall not block the free falling sprayed fog.
- (d) The chloric dissolution shall not be dropped from one another specimen.

(3) Laboratory Conditions

CASS laboratory conditions shall be as following.

- (a) Maintain the temperature of exposure table that holds the specimen in the spray room as 50 ± 2 °C, and record the temperature at least twice in the morning and evening.
- (b) Set the two clean spray-capturing containers to the spot close to nozzle for the one, and to the spot far from the nozzle for the other while taking care of that no drops from the specimen or other things fall.
- (c) The spray capturing container shall be clean and as wide as 80cm², and when testing straightly for 16hours (1 cycle), it shall capture 1.5 ~ 2 ml of the dissolution for average of every hour.

The captured dissolution's concentration shall be 5 ± 1 %.