

Sekisui Plastics Co., Ltd.

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Investor and Public Relations Department

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Sekisui Plastics Develops a new grade for ST-gel™ for High Humidity

Sekisui Plastics Co., Ltd. (Head Office: 2-4-4 Nishi-tenma, Kita-ku, Osaka, Japan; President: Masato Kashiwabara) has developed ST-gel <LS Grade> that can maintain its performance under high humidity.

1. Background

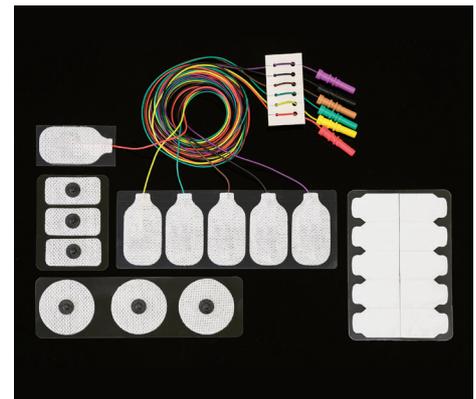
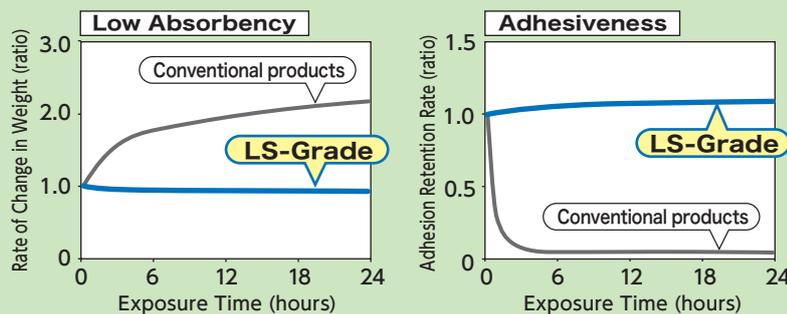
ST-gel is a gel material that is gentle on skin and has excellent safety, made from a polymer matrix containing water, a moisturizing solvent, and electrolytes. It is widely used as a bioelectrode component on the skin-interface.

There has been demand in recent years for materials in the medical/healthcare field that can maintain stable measurements in biometric monitoring applications, such as for wearable devices where sweating can be expected during exercise, and for infant sensors in incubators which have high humidity. We have succeeded in developing ST-gel <LS Grade>, that stays firmly attached to skin even after long periods of use, with the conflicting characteristics of low hygroscopicity in conditions of high humidity and maintaining conductivity, which has been technically difficult until now.

2. Features

- **hygroscopicity** : Performance can be maintained and changes in gel composition are unlikely to occur because hygroscopicity is low.
- **Adhesiveness** : Adhesive strength is maintained in high humidity to prevent separation from skin.
- **Conductivity** : Impedance can be adjusted by adding a conductive electrolyte.
- **Safety** : Confirmed safety by conducting a biocompatibility assessment based on ISO10993

◎ Exposure Evaluation under High Humidity (40°C and 90% relative humidity)



Bioelectrode Pads

3. Future Development

(1) **Sales plan** : 35 million US\$ in FY2021 (ST-gel overall)

(2) **Expected Fields/Uses**

Sekisui Plastics does not just provide ST-gel as a material, but also produces domestic bioelectrodes using ST-gel, from design to production. We are also promoting the construction of a global bioelectrode production system. The company is aiming to expand its medical healthcare fields by taking advantage of ST-gel <LS-Grade>, which can be used for a long period of time in high humidity conditions.

END