

## H05F

**STATIC ELECTRICITY; NATURALLY-OCCURRING ELECTRICITY (electrostatic machines [H02N](#); uses of electricity in performing operations, e.g. precipitation, see the relevant subclasses for the operations)**

### Definition statement

*This place covers:*

Means for preventing the formation of or removal of electrostatic charges in general, not otherwise provided for.

Using naturally-occurring electricity (e.g. lightning)

### Relationships with other classification places

As more and more the protection from and the removal of electrostatic charges have become critical in many systems and devices, subclasses have been created in many areas incorporating the scope of [H05F](#), rendering this subclass the last appropriate place for classification.

Spark gaps, sparking plugs and corona discharge devices are classified in subclass [H01T](#).

Electrostatic machines are classified in [H02N](#).

### References

#### Limiting references

*This place does not cover:*

Installations of lightning conductors; Fastening thereof to supporting structure	<a href="#">H02G 13/00</a>
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**Specific applications of methods or arrangements for preventing the formation of static electricity or for carrying off these charges after their formation. For example:**

Garments protecting against electric shocks or static electricity	<a href="#">A41D 13/008</a>
Footwear with earthing or grounding means	<a href="#">A43B 7/36</a>
Carrying off electrostatic charges from living beings	<a href="#">A61N 1/14</a>
Electric elements specially adapted for carrying off electrostatic charges from vehicles	<a href="#">B60R 16/06</a>
Static discharge and lightning protection for aircraft	<a href="#">B64D 45/02</a>
Arrangements in large containers	<a href="#">B65D 90/46</a>
Structural protection against electrostatic charges or discharges for semiconductor devices	<a href="#">H01L 23/60</a>
Protective earth or shield arrangements on coupling devices	<a href="#">H01R 13/648</a>
Devices providing for corona discharge	<a href="#">H01T 19/00</a>
Screening of printed circuits or components thereof against electric or magnetic fields	<a href="#">H05K 9/00</a>

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Domestic cleaning implements functioning electrostatically	<a href="#">A47L 13/40</a>
Cleaning by electrostatic means	<a href="#">B08B 6/00</a>
Apparatus for electrographic processes using a charge pattern	<a href="#">G03G 15/00</a>
Electrostatic machines	<a href="#">H02N</a>

**Glossary of terms**

In this place, the following terms or expressions are used with the meaning indicated:

Corona discharge or brush discharge	Discharge from a conductor when the potential difference between it and its surroundings exceeds a certain value but is not enough to cause a spark or an arc.
Spark gaps	Enclosed or non-enclosed discharge devices having cold electrodes and used exclusively to discharge a quantity of electrical energy in small time duration.
Coupling devices	Devices having two or more parts specially adapted so as to be capable of ready and repeated physical engagement or disengagement, without the use of a tool for the purpose or establishing or breaking an electrical path.
Electrostatic charge	They are used as synonyms for the electric charge at rest on the surface of an insulator or insulated body.

**H05F 1/00****Preventing the formation of electrostatic charges****Definition statement**

*This place covers:*

Means that prevent or suppress electrostatic charge build-up.

**References****Limiting references**

*This place does not cover:*

Antistatic coating in cathode/electron tubes	<a href="#">H01J 29/868</a>
Antistatic elements in semiconductor handling	<a href="#">H01L 21/67396</a>

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Antistatic materials	<a href="#">C09K 3/16</a>
Treatment of fabrics	<a href="#">D06M 15/00</a>

**H05F 3/00**

**Carrying-off electrostatic charges** (from shoes [A43B 7/36](#)); from living beings [A61N 1/14](#); from tyres [B60C 19/08](#); from vehicles [B60R 16/06](#); from aircraft [B64D 45/02](#); from large containers [B65D 90/46](#))

**Definition statement**

*This place covers:*

Residual main group for removing electrostatic charges not provided elsewhere.

**References****Limiting references**

*This place does not cover:*

Chemical processes involving electrical discharges	<a href="#">B01J 19/08</a>
Electrostatic spraying	<a href="#">B05B 5/00</a>
Purifying air by electrostatic fields	<a href="#">F24F 3/166</a>
Devices providing for corona discharge	<a href="#">H01T 19/00</a>
Apparatus for generating ions into the atmosphere	<a href="#">H01T 23/00</a>

**Application-oriented references**

*Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

(removal of or protection from electrostatic charge, rec)

Rec in footwear	<a href="#">A43B 3/163</a>
Grounding means for footwear	<a href="#">A43B 7/36</a>
Rec in chairs, beds	<a href="#">A47C 31/004</a>
Rec in electrotherapy	<a href="#">A61N 1/14</a>
Rec in tyres	<a href="#">B60C 19/08</a>
Rec in vehicles	<a href="#">B60R 16/06</a>
Rec in aircrafts	<a href="#">B64D 45/02</a>
Rec from sheets, webs	<a href="#">B65H 2301/5133</a>
Rec in transfer of liquids from bulk storage into vehicles or smaller containers	<a href="#">B67D 7/3236</a>
Antistatic layers in flexible sheet materials	<a href="#">D06N 7/0042</a>
Rec in semiconductors	<a href="#">H01L 23/60</a>
Rec in electric connectors	<a href="#">H01R 13/6485</a>
Rec in electronic devices	<a href="#">H05K 9/0067</a> , <a href="#">H05K 9/0079</a>

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Conductive hoses	<a href="#">F16L 11/127</a> , <a href="#">F16L 11/1185</a>
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**H05F 7/00****Use of naturally-occurring electricity, {e.g. lightning or static electricity}****Definition statement**

*This place covers:*

Recovery and use of naturally-occurring electricity or electrostatic charge, ex., lightning.

**Relationships with other classification places**

When the subject matter is the machine (normally a generator) that receives natural electrostatic charge and produces electric energy, [H02N 1/00](#) or [H02N 11/00](#) are relevant.

**References****Limiting references**

*This place does not cover:*

Devices or methods for influencing weather	<a href="#">A01G 15/00</a>
Screening atmospheric or terrestrial radiations or fields	<a href="#">A61N 1/16</a>
Lighter-than-air aircrafts (ex balloons)	<a href="#">B64B 1/50</a>
Measurements related to lightning	<a href="#">G01R 29/0842</a>
Measuring atmospheric potential differences	<a href="#">G01W 1/16</a>
Installation of lightning conductors	<a href="#">H02G 13/00</a>