

# Plant Discharge Data

## State of Assurance of Air and Water Quality in FY 2000

**Kariya Region**  
 Kariya Plant,  
 Trial Manufacturing Plant,  
 Laboratory

Address: 2-1 Asahi-machi,  
 Kariya, Aichi 448-8650, Japan  
 Completion: March 1943  
 Main products: Disc brakes,  
 brake master cylinders,  
 proportioning valves, parking brakes,  
 wheel cylinders, etc.  
 Land area: 182,000m<sup>2</sup>  
 Floor space: 148,000m<sup>2</sup>  
 Employees: 4,130人

**Air Quality**

| Item | Equipment               | Regulated value | Aisin environmental standard | Measured value |
|------|-------------------------|-----------------|------------------------------|----------------|
| NOx  | Boiler                  | 180             | 150                          | 110            |
|      | Gas carburizing furnace | 0.20            | 0.20                         | 0.004          |
| SOx  | Boiler                  | 1.75            | 1.75                         | 0.21           |
|      | Gas carburizing furnace | 3.5             | 1.75                         | 0.007          |

**Water Quality**

| Item                | Regulated value | Aisin environmental standard | Measured value |         |
|---------------------|-----------------|------------------------------|----------------|---------|
|                     |                 |                              | Maximum        | Average |
| pH                  | 5.8~8.6         | 5.8~8.6                      | 7.5            | 6.1     |
| BOD                 | 25              | 20                           | 9.9            | 3.7     |
| COD                 | 25              | 20                           | 8.4            | 4.8     |
| SS                  | 30              | 20                           | 17             | 4.7     |
| n-hexane extract    | 5               | 3                            | 0.2            | 0.1     |
| Total nitrogen      | 15              | 15                           | 6.8            | 4.3     |
| Total phosphorus    | 2               | 2                            | 0.29           | 0.12    |
| Coli bacteria       | 3000            | 1000                         | 20             | 2       |
| Soluble iron        | 5               | 2                            | ND             | ND      |
| Soluble manganese   | 5               | 2                            | 0.07           | 0.1     |
| Zinc                | 5               | 2                            | 0.37           | 0.11    |
| Copper              | 1               | 0.5                          | ND             | —       |
| Chromium            | 2               | 0.4                          | ND             | —       |
| Phenols             | 5               | 1                            | ND             | —       |
| Fluorine            | 15              | 2                            | ND             | —       |
| Cadmium             | 0.1             | ND                           | ND             | —       |
| Cyanide             | 1               | ND                           | ND             | —       |
| Lead                | 0.08            | ND                           | ND             | —       |
| Hexavalent chromium | 0.5             | ND                           | ND             | —       |

**Nishio Region**  
 Nishio Plant,  
 Nishio Body Components Plant,  
 Machinery & Equipment Plant

Address: 80 Kowari, Minamimikane-cho,  
 Nishio, Aichi 445-0801, Japan  
 Completion: March 1967  
 Main products: Pistons, intake manifolds,  
 transmission cases, oil pumps, water pumps,  
 variable valve timing, sunroofs, spoilers, roof  
 rails, door handles, etc.  
 Cutting machines, automatic assembly  
 machines, dies, testers, plastic molding  
 machines, etc.  
 Land area: 253,000m<sup>2</sup>  
 Floor space: 151,000m<sup>2</sup>  
 Employees: 2,370

**Air Quality**

| Item              | Equipment                  | Regulated value | Aisin environmental standard | Measured value |
|-------------------|----------------------------|-----------------|------------------------------|----------------|
| NOx               | Boiler                     | 230             | 150                          | 130            |
|                   | Aluminum melting furnace   | 180             | 150                          | 70             |
|                   | Heat-treatment furnace     | 180             | 150                          | 35             |
|                   | Waste-material incinerator | 250             | 250                          | 160            |
|                   | Generating facility        | 100             | 100                          | 27             |
| Dust              | Boiler                     | 0.20            | 0.20                         | 0.003          |
|                   | Aluminum melting furnace   | 0.20            | 0.20                         | 0.09           |
|                   | Heat-treatment furnace     | 0.20            | 0.20                         | 0.002          |
|                   | Waste-material incinerator | 0.50            | 0.40                         | 0.21           |
| SOx               | Generating facility        | 0.05            | 0.05                         | 0.002          |
|                   | All facilities             | 3.0             | 3.0                          | 0.51           |
| Hydrogen chloride | Waste-material incinerator | 700             | 500                          | 100            |

**Water Quality**

| Item                | Regulated value | Aisin environmental standard | Measured value |         |
|---------------------|-----------------|------------------------------|----------------|---------|
|                     |                 |                              | Maximum        | Average |
| pH                  | 5.8~8.6         | 5.8~8.6                      | 7.5            | 6.8     |
| BOD                 | 10              | 10                           | 2.9            | 1.2     |
| COD                 | 10              | 10                           | 5.7            | 3.6     |
| SS                  | 10              | 10                           | 7.0            | 1.1     |
| n-hexane extract    | 5               | 2                            | 0.2            | 0.1     |
| Total nitrogen      | 15              | 15                           | 1.6            | 0.94    |
| Total phosphorus    | 2               | 2                            | 0.07           | 0.06    |
| Coli bacteria       | 300             | 300                          | 0              | 0       |
| Soluble iron        | 3               | 2                            | ND             | ND      |
| Soluble manganese   | 3               | 2                            | ND             | ND      |
| Zinc                | 1               | 1                            | 0.35           | 0.11    |
| Copper              | 0.5             | 0.5                          | ND             | —       |
| Chromium            | 0.1             | 0.1                          | ND             | —       |
| Phenols             | 0.5             | 0.5                          | ND             | —       |
| Fluorine            | 2               | 2                            | ND             | —       |
| Cadmium             | 0.1             | ND                           | ND             | —       |
| Cyanide             | ND              | ND                           | ND             | —       |
| Lead                | 0.1             | ND                           | ND             | —       |
| Hexavalent chromium | 0.05            | ND                           | ND             | —       |

**Shintoyo Plant**

Address: 1 Tanno, Takaokashinmachi,  
 Toyota, Aichi 473-0921, Japan  
 Completion: August 1961  
 Main products: Back window  
 moldings, belt moldings, seats,  
 door frames, door hinges,  
 sunroofs, etc.  
 Land area: 86,000m<sup>2</sup>  
 Floor space: 63,000m<sup>2</sup>  
 Employees: 1,420  
 The treatment of the plant wastewater is  
 subcontracted to a group subsidiary that  
 is located in the same lot. Because it is  
 treated together with others, no individual  
 data is available for the Shintoyo Plant.

**Air Quality**

| Item | Equipment               | Regulated value | Aisin environmental standard | Measured value |
|------|-------------------------|-----------------|------------------------------|----------------|
| NOx  | Boiler                  | 180             | 150                          | 72             |
|      | Boiler                  | 0.10            | 0.10                         | 0.002          |
| Dust | Gas carburizing furnace | 0.20            | 0.20                         | 0.002          |
|      | Boiler                  | 9.0             | 9.0                          | 0.17           |
| SOx  | Gas carburizing furnace | 9.0             | 9.0                          | 0.004          |

**Anjo Plant**

Address: 1-24 Shofukuda,  
 Minowa-cho, Anjo, Aichi  
 446-8524, Japan  
 Completion: November 1961  
 Main products: Beds, embroidery  
 machines, shower-toilet seats,  
 GHP, auxiliary artificial hearts,  
 drive equipment,  
 system machines, etc.  
 Land area: 36,000m<sup>2</sup>  
 Floor space: 26,000m<sup>2</sup>  
 Employees: 380

**Water Quality**

| Item                | Regulated value | Aisin environmental standard | Measured value |         |
|---------------------|-----------------|------------------------------|----------------|---------|
|                     |                 |                              | Maximum        | Average |
| pH                  | 6.5~8.5         | 6.5~8.5                      | 7.5            | 7.1     |
| BOD                 | 20              | 15                           | 6.3            | 1.8     |
| COD                 | 25              | 25                           | 7.3            | 5.1     |
| SS                  | 20              | 20                           | 3.9            | 1.1     |
| n-hexane extract    | 4               | 3                            | 1.2            | 0.2     |
| Total nitrogen      | 40              | 40                           | 12             | 8.3     |
| Total phosphorus    | 3               | 3                            | 0.45           | 0.10    |
| Coli bacteria       | 1000            | 1000                         | 0              | 0       |
| Soluble iron        | 2               | 2                            | ND             | ND      |
| Soluble manganese   | 2               | 2                            | 0.11           | —       |
| Zinc                | 2               | 2                            | 0.14           | 0.08    |
| Copper              | 0.2             | 0.2                          | ND             | —       |
| Chromium            | 0.2             | 0.2                          | ND             | —       |
| Phenols             | 0.2             | 0.2                          | ND             | —       |
| Fluorine            | 2               | 2                            | ND             | —       |
| Cadmium             | ND              | ND                           | ND             | —       |
| Cyanide             | ND              | ND                           | ND             | —       |
| Lead                | 0.1             | ND                           | ND             | —       |
| Hexavalent chromium | 0.05            | ND                           | ND             | —       |

**Air Quality**

| Item | Equipment | Regulated value | Aisin environmental standard | Measured value |
|------|-----------|-----------------|------------------------------|----------------|
| NOx  |           | —               | 230                          | 31             |
| Dust | Boiler    | 0.30            | 0.30                         | 0.002          |
| SOx  |           | 5.3             | 5.0                          | 0.004          |

**Ogawa Plant**

Address: 1 Kukui, Ogawa-cho,  
 Anjo, Aichi 444-1162, Japan  
 Completion: December 1985  
 Main products: Clutch covers,  
 clutch discs,  
 automatic transmissions  
 Land area: 88,000m<sup>2</sup>  
 Floor space: 72,000m<sup>2</sup>  
 Employees: 760

**Air Quality**

| Item | Equipment       | Regulated value | Aisin environmental standard | Measured value |
|------|-----------------|-----------------|------------------------------|----------------|
| NOx  | Boiler          | 150             | 150                          | 50             |
|      | Heating furnace | 180             | 250                          | 58             |
|      | Generator       | 70              | 100                          | 33             |
| Dust | Boiler          | 0.10            | 0.20                         | 0.002          |
|      | Heating furnace | 0.20            | 0.40                         | 0.002          |
|      | Generator       | 0.05            | 0.05                         | 0.002          |
| SOx  | Boiler          | 3.0             | 0.20                         | 0.008          |
|      | Heating furnace | 3.0             | 0.40                         | 0.03           |
|      | Generator       | 3.0             | 0.05                         | 0.20           |

**Water Quality**

| Item                | Regulated value | Aisin environmental standard | Measured value |         |
|---------------------|-----------------|------------------------------|----------------|---------|
|                     |                 |                              | Maximum        | Average |
| pH                  | 6.5~8.5         | 6.5~8.5                      | 7.3            | 7.1     |
| BOD                 | 10              | 10                           | 8.5            | 2.3     |
| COD                 | 160             | 10                           | 6.4            | 3.2     |
| SS                  | 10              | 10                           | 2.7            | 0.8     |
| n-hexane extract    | 2               | 2                            | 0.2            | 0.1     |
| Total nitrogen      | 40              | 40                           | 13             | 9.2     |
| Total phosphorus    | 3               | 3                            | 0.57           | 0.14    |
| Coli bacteria       | 300             | 300                          | 12             | 2       |
| Soluble iron        | 2               | 2                            | ND             | ND      |
| Soluble manganese   | 2               | 2                            | ND             | —       |
| Zinc                | 2               | 2                            | 0.50           | 0.17    |
| Copper              | 0.2             | 0.2                          | ND             | 0.1     |
| Chromium            | 0.2             | 0.2                          | ND             | —       |
| Phenols             | 0.2             | 0.2                          | ND             | —       |
| Fluorine            | 2               | 2                            | ND             | —       |
| Cadmium             | ND              | ND                           | ND             | —       |
| Cyanide             | ND              | ND                           | ND             | —       |
| Lead                | 0.1             | ND                           | ND             | —       |
| Hexavalent chromium | 0.05            | ND                           | ND             | —       |

**Shinkawa Plant**

Address: 4-75 Rokuken-cho,  
 Hekinan, Aichi 447-0861, Japan  
 Completion: March 1945  
 Main products: Door locks,  
 window regulators, sensors, etc.  
 Land area: 20,000m<sup>2</sup>  
 Floor space: 23,000m<sup>2</sup>  
 Employees: 460

**Air Quality**

| Item | Equipment | Regulated value | Aisin environmental standard | Measured value |
|------|-----------|-----------------|------------------------------|----------------|
| NOx  |           | 250             | 230                          | 110            |
| Dust | Boiler    | 0.30            | 0.30                         | 0.002          |
| SOx  |           | 3.5             | 1.75                         | 0.16           |

**Water Quality**

| Item                | Regulated value | Aisin environmental standard | Measured value |         |
|---------------------|-----------------|------------------------------|----------------|---------|
|                     |                 |                              | Maximum        | Average |
| pH                  | 5.8~8.6         | 5.8~8.6                      | 7.7            | 6.7     |
| BOD                 | 25              | 20                           | 16             | 3.1     |
| COD                 | 25              | 20                           | 15             | 7.2     |
| SS                  | 30              | 20                           | 10             | 1.2     |
| n-hexane extract    | 5               | 3                            | 1.4            | 0.2     |
| Total nitrogen      | 40              | 40                           | 42*            | 19      |
| Total phosphorus    | 3               | 3                            | 2.1            | 0.8     |
| Coli bacteria       | 3000            | 1000                         | 0              | 0       |
| Soluble iron        | 5               | 2                            | ND             | —       |
| Soluble manganese   | 5               | 2                            | ND             | —       |
| Zinc                | 5               | 2                            | 0.60           | 0.23    |
| Copper              | 1               | 0.5                          | ND             | —       |
| Chromium            | 2               | 0.4                          | ND             | —       |
| Phenols             | 5               | 1                            | ND             | —       |
| Fluorine            | 15              | 2                            | ND             | —       |
| Cadmium             | 0.1             | ND                           | ND             | —       |
| Cyanide             | 1               | ND                           | ND             | —       |
| Lead                | 0.1             | ND                           | ND             | —       |
| Hexavalent chromium | 0.5             | ND                           | ND             | —       |

The standard of 2 mg/l was exceeded in winter. The cause was found to be weakening of nitrifying bacteria, which led to inadequate nitrification of ammoniac nitrogen. Action taken to correct this included MSL in periodic replacement of activated sludge and on-site control, control of mode-specific nitrogen measurement, and the like. Favorable measurements have been obtained since this action was undertaken.

**Handa Region**  
 Handa Plant,  
 Handa Electronic Plant

Address: 4-29 Nitto-cho, Handa,  
 Aichi 475-0033, Japan  
 Completion: April 1991  
 Main products: Electronic  
 components (computers,  
 sensors, solenoids, etc.),  
 ABS, air-suspension systems, etc.  
 Land area: 325,000m<sup>2</sup>  
 Floor space: 80,000m<sup>2</sup>  
 Employees: 1,120

**Air Quality**

| Item | Equipment | Regulated value | Aisin environmental standard | Measured value |
|------|-----------|-----------------|------------------------------|----------------|
| NOx  | Boiler    | 150             | 150                          | 50             |
|      | Generator | 200             | 200                          | 170            |
| Dust | Boiler    | 0.10            | 0.10                         | 0.002          |
|      | Generator | 0.05            | 0.05                         | 0.002          |
| SOx  | Boiler    | 1.75            | 1.75                         | 0.008          |
|      | Generator | 1.75            | 1.75                         | 0.05           |

**Water Quality**

| Item                | Regulated value | Aisin environmental standard | Measured value |         |
|---------------------|-----------------|------------------------------|----------------|---------|
|                     |                 |                              | Maximum        | Average |
| pH                  | 6.0~8.0         | 6.0~8.0                      | 7.5            | 6.8     |
| BOD                 | 15              | 10                           | 6.0            | 1.2     |
| COD                 | 15              | 10                           | 5.7            | 3.4     |
| SS                  | 15              | 10                           | 2.5            | 0.8     |
| n-hexane extract    | 2               | 2                            | 0.2            | 0.1     |
| Total nitrogen      | 15              | 15                           | 9.1            | 5.8     |
| Total phosphorus    | 2               | 2                            | 0.06           | 0.1     |
| Coli bacteria       | 3000            | 1000                         | 1              | 0       |
| Soluble iron        | 0.5             | 0.5                          | ND             | ND      |
| Soluble manganese   | 0.5             | 0.5                          | ND             | —       |
| Zinc                | 5               | 2                            | 0.70           | 0.19    |
| Copper              | 1               | 0.5                          | ND             | —       |
| Chromium            | 2               | 0.4                          | ND             | —       |
| Phenols             | 0.5             | 0.5                          | ND             | —       |
| Fluorine            | 15              | 2                            | ND             | —       |
| Cadmium             | 0.1             | ND                           | ND             | —       |
| Cyanide             | 1               | ND                           | ND             | —       |
| Lead                | 0.1             | ND                           | ND             | —       |
| Hexavalent chromium | 0.5             | ND                           | ND             | —       |