

Illustrated Casebook of chemSHERPA®

The 17th edition

Compatible with
chemSHERPA Tool Version:V2R1.02.0
(External List Ver2.12.00)

12 September 2025
Joint Article Management Promotion-consortium

Distribution of chemSHERPA-CI/AI sample data

Sample data which are issued with chemSHERPA tools are released.

Please use these sample data as references when you issue directly by chemSHERPA Data entry support tool. Also, please use the reference drawings which are provided to help you to understand about parts configuration of the products.

Please note that the content information of the provided chemSHERPA-CI/AI sample data does not relate to the information of actual chemicals, mixtures or parts of products. Sample data is not to be used for purposes except referring data entry method of the tools.

We believe they would be helpful to understand about chemSHERPA-CI/AI.

Contents of chemSHERPA Casebook

Click on the part name to see the reference diagram.

Component name

File name

1 Electrolytic capacitor	* SHAI_AlumEleCapa_2.12.00_V2ex_20250912000000.shai
2 Laminated ceramic capacitor	* SHAI_Chip Capacitor_2.12.00_V2ex_20250912000000.shai
3 Chip varistor	* SHAI_Chip Varistor_2.12.00_V2ex_20250912000000.shai
4 Connector	* SHAI_Connector_2.12.00_V2ex_20250912000000.shai
5 Film	* SHAI_Film_2.12.00_V2ex_20250912000000.shai
6 Fuser roller	* SHAI_Fuser_roller_2.12.00_V2ex_20250912000000.shai
7 IC BGA	* SHAI_IC_BGA_J_2.12.00_V2ex_20250912000000.shai
8 Operation manual enclosed	* SHAI_Manual_2.12.00_V2ex_20250912000000.shai
9 Printed wired board	* SHAI_PWB_2.12.00_V2ex_20250912000000.shai
10 Switch	* SHAI_Switch_2.12.00_V2ex_20250912000000.shai
11 Thermal fuse	* SHAI_thermal fuse_2.12.00_V2ex_20250912000000.shai
12 Transformer	* SHAI_Transformer_2.12.00_V2ex_20250912000000.shai
13 Wire	* SHAI_Wire_2.12.00_V2ex_20250912000000.shai
14 Screw	* SHAI_screw_2.12.00_V2ex_20250912000000.shai
15 LED chip	* SHAI_LED_2.12.00_V2ex_20250912000000.shai
* Adhesive	* SHCI_Adhesive_2.12.00_V2ex_20250912000000.shci
* Paint	* SHCI_coating_2.12.00_V2ex_20250912000000.shci
* Plastic colorant	* SHCI_coloring_2.12.00_V2ex_20250912000000.shci
* Polystyrene compound	* SHCI_polystyrene_2.12.00_V2ex_20250912000000.shci
* Polyvinyl chloride resin	* SHCI_PVC_2.12.00_V2ex_20250912000000.shci
* SolderPaste	* SHCI_SolderPaste_2.12.00_V2ex_20250912000000.shci

Casebook_Touch light (Composite part)

Click on the part name to
see the reference diagram.

* **Component name**

[16-1 Touch light](#)

[16-4 All parts for Touch light](#)

* **File name**

* SHAI_Touch_light_2.12.00_V2ex_20250912000000.shai

* SHAI_All_parts_for_Toch_light_2.12.00_V2ex_20250912000000.shai

* **Molding material**

[16-2 PP resin/PS resin](#)

* SHCI_PP_PS_material_2.12.00_V2ex_20250912000000.shci

Casebook_ Module as Semiconductor IC (BGA) mounted on Printed circuit board (Composite part)

Click on the part name to see the reference diagram.

* **Component name**

[17-1 IC module](#)

[7-1 IC BGA](#)

[9-1 PCB](#)

* **File name**

* SHAI_module EN_2.12.00_V2ex_20250912000000.shai

* SHAI_IC_BGA_J_2.12.00_V2ex_20250912000000.shai

* SHAI_PWB_2.12.00_V2ex_20250912000000.shai

* **Solder**

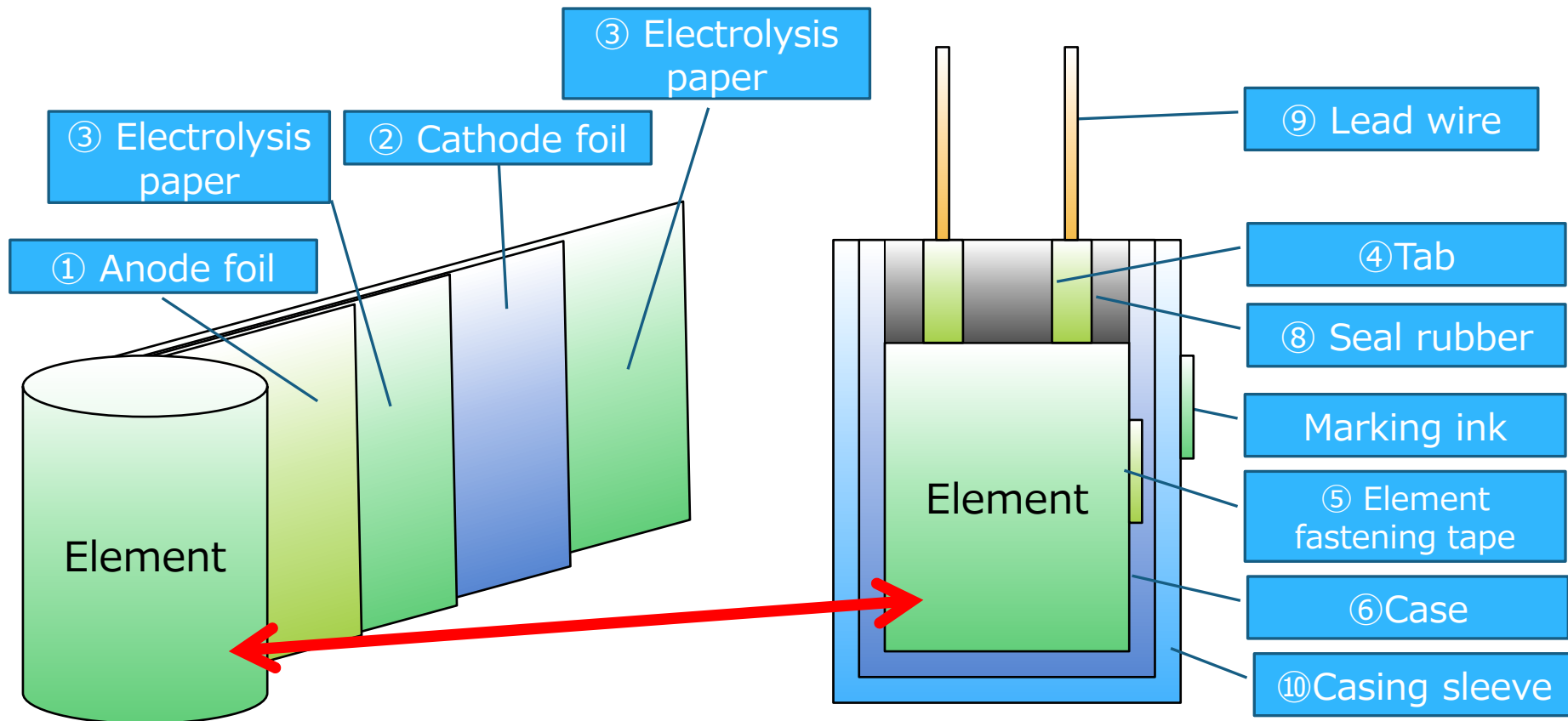
[17-3 Solder paste](#)

* SHCI_High Lead solder Paste EN_2.12.00_V2ex_20250912000000.shci

1-1 Electrolytic capacitor



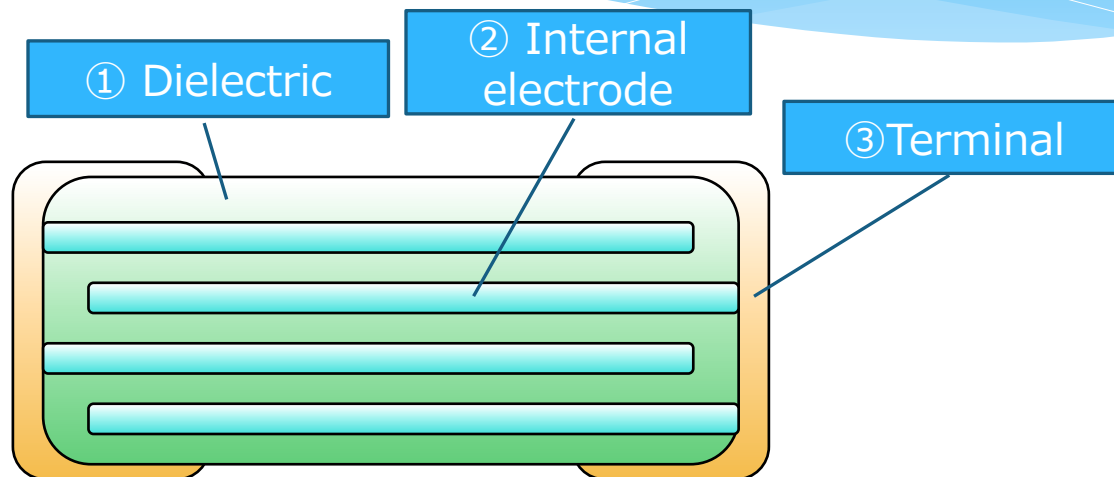
The electrolyte is impregnated with the element inside. The element is enclosed in a case to prevent evaporation of the electrolyte, and the edge face is sealed with rubber.



1-2 Electrolytic capacitor

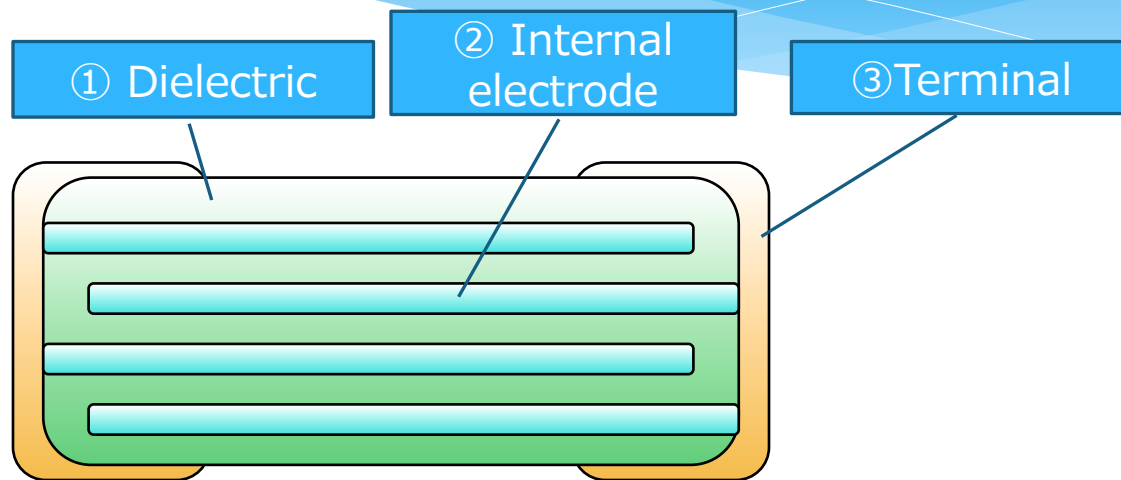
	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Anode foil	1	Aluminum	240 mg	Aluminum(99%), Aluminium oxide
2	Cathode foil	1	Aluminum	80mg	Aluminum
3	Electrolysis paper	1	Paper	82mg	Cellulose
4	Tab	2	Aluminum	23.5mg	Aluminum
5	Element fastening tape	1	Polypropylene	14mg	Polypropylene, Acrylic copolymer, n-butyl acrylate, Diethyl phthalate(5%)
6	Case	1	Aluminum	220mg	Aluminum
7	Electrolyte	1	Other	180mg	Ethylene glycol(80%), Ammonium salt of adipic acid
8	Seal rubber	1	NBR	200mg	N B R, Carbon black
9	Lead wire	2	Steel	5.6mg	Iron
			Copper plating	1.6mg	Copper
			Tin plating	0.3mg	Tin
10	Casing sleeve	1	P E T	41.9mg	P E T
			Phenol resin	0.1mg	Phenol resin

2-1 Laminated ceramic capacitor



	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Dielectric	1	Ceramic	0.55mg	Barium titanate
2	Internal electrode	1	Nickel	0.23mg	Nickel
3	Terminal	1	Copper	0.4 mg	Copper
			Nickel plating	0.03 mg	Nickel
			Tin plating	0.03 mg	Tin

3-1 Chip varistor



	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Dielectric	1	Ceramic	5.0mg	Zinc oxide(93%), Cobalt oxide (1%), Nickel oxide (1%), Antimony trioxide (5%)
2	Internal electrode	1	Palladium	0.05mg	Palladium(30%), Silver(70%)
3	Terminal	1	Palladium	0.32 mg	Palladium(30%), Silver(70%)
			Nickel plating	0.05 mg	Nickel
			Tin plating	0.08 mg	Tin

4-1 Connector

② Insulating element

③ Shell

① Terminal

⑤ Screw thread

④ Junction shell



Note: Lead exempted from RoHS directive is contained to shell.

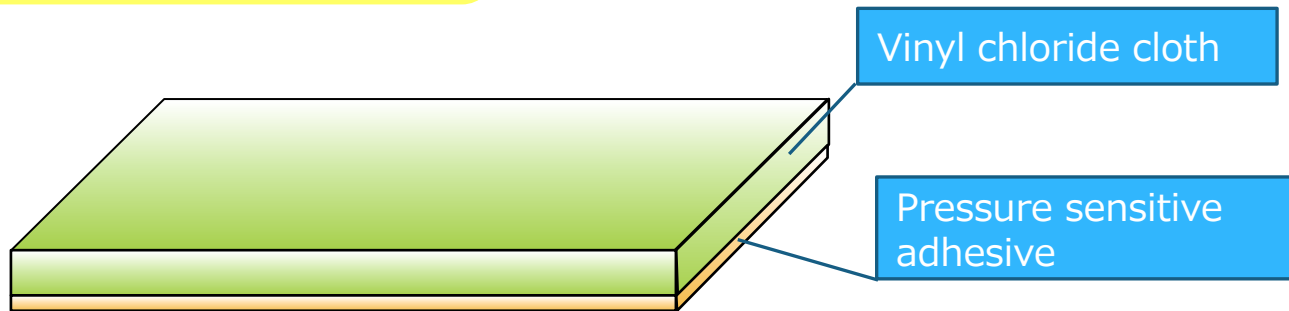
6(a)- I Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35% lead by weight

Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1 Terminal	15	Phosphor bronze	0.03 g	Copper(70%),Tin, Phosphorus(0.2%)
		Tin plating	0.6 mg	Tin
2 Insulating element	1	PBT resin	0.5 g	PBT, Antimony trioxide (7%), Bromine flame retardant TBBA(25%)
3 Shell	1	Free-cutting steel	4 g	Iron, Lead(0.2%)
		Nickel plating	0.3 mg	Nickel
4 Junction shell	1	A B S resin	5 g	ABS, Antimony trioxide (5%) , Bromine flame retardant TBBA(20%)
5 Screw thread	2	Carbon steel	0.2 g	Iron, Carbon
		Chrome plating	0.2 mg	Chromium



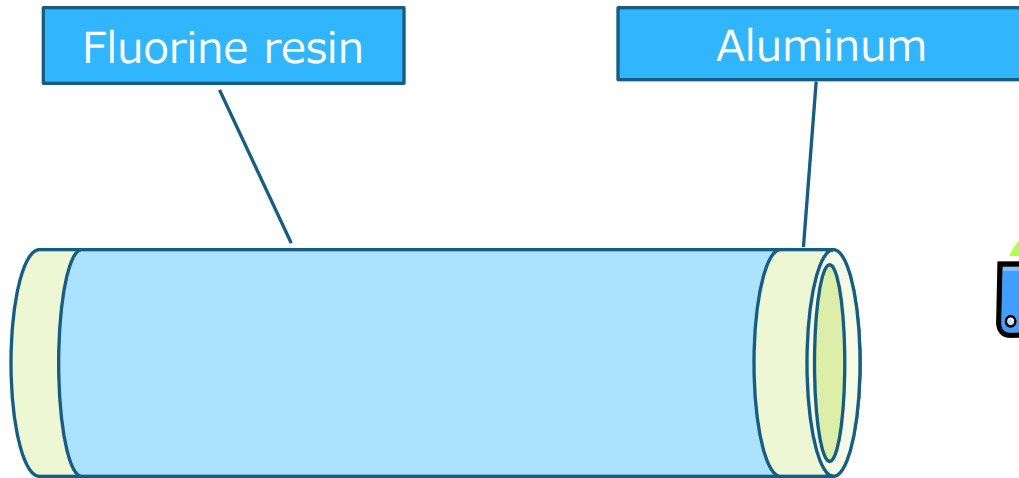
5-1 Film

Electrical insulation tape applied
acrylic pressure sensitive
adhesive to Vinyl chloride cloth



	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Film	1	Vinyl chloride cloth	134g	PVC, Phthalate ester (DEHP) (4%)
			Pressure sensitive adhesive	66g	Acrylic resin, Toluene(0.0001%)

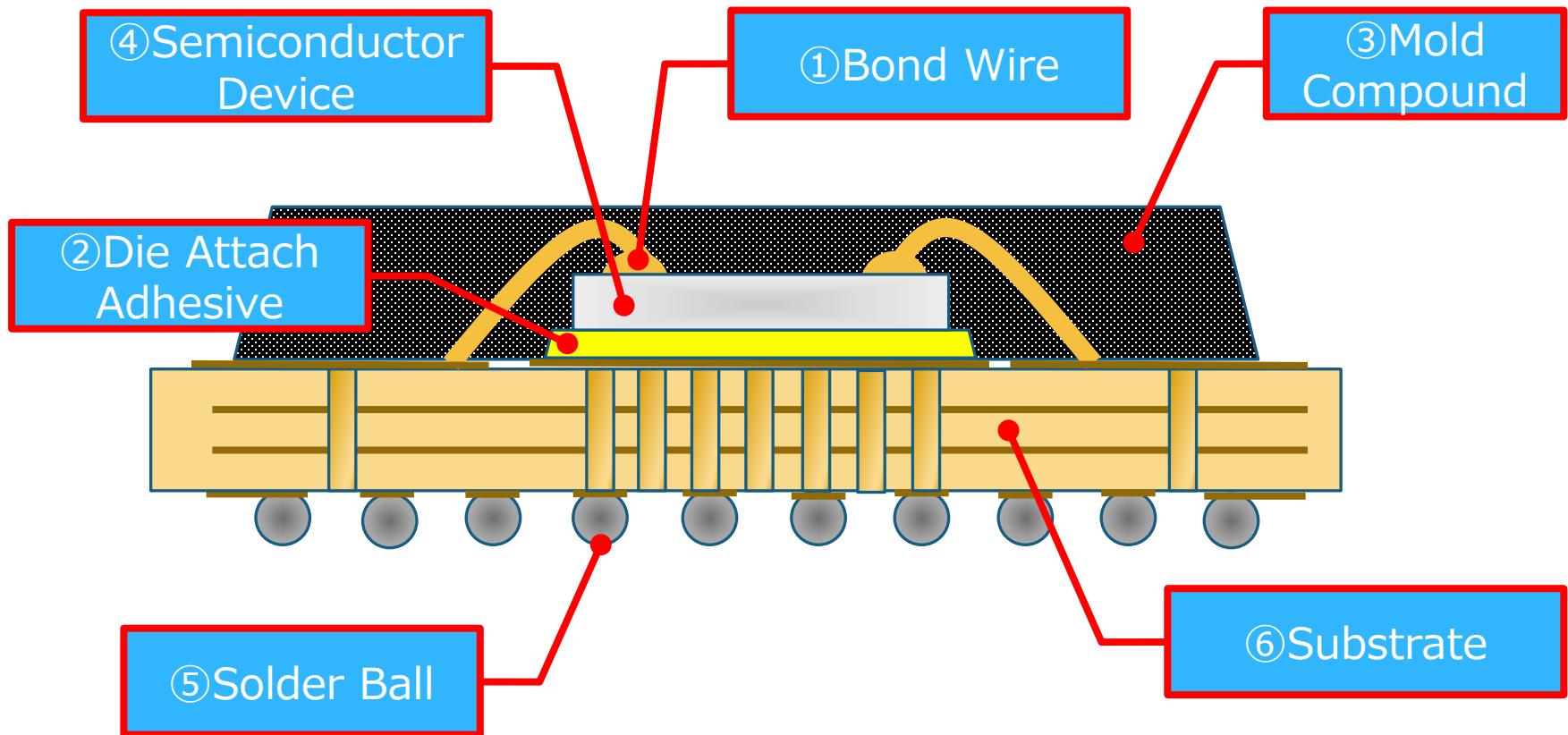
6-1 Fuser roller



Roller baked after coating with fluorine resin to a aluminum shaft

	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Roller	1	Aluminum	72 g	Aluminum(97.3%), Iron arsenate (0.6%), Magnesium arsenide (1.4%), Copper 5 hydrate selenate (0.7%)
			Fluorine resin	5.2 g	Fluorine resin (PTFE:100%)

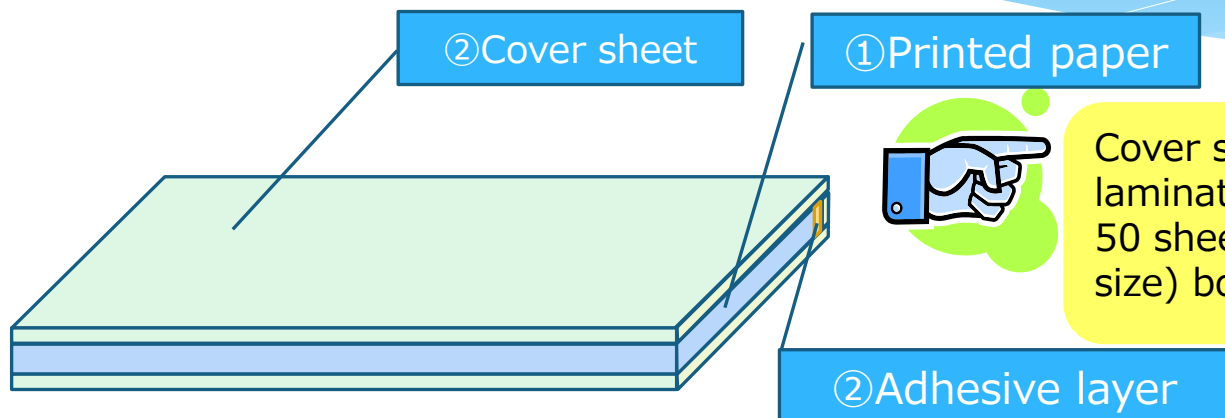
7-1 IC BGA



7-2 IC BGA

	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Bond Wire	1	Copper alloy	2.0142mg	Copper
2	Die Attach Adhesive	1	Conductive adhesive	7.1494mg	Silver (82%)
3	Mold Compound	1	Sealing material (Inorganic material, Thermosetting resin)	340.6948mg	Silica(75%), Epoxy, Organic phosphorus (0.2%)
4	Semiconductor Device	1	Non-ferrous metal	22.4687mg	Silicon
5	Solder Ball	1	Lead-free solder alloy	173.8345mg	Copper (0.5%), Silver (1.2%)
6	Substrate	1	Epoxy	70.5056mg	Epoxy, Silica(70%)
		1	Copper alloy	46.1628mg	Copper
		1	Plating material	4.4528mg	Nickel
		1	Plating material	0.5789mg	Gold

8-1 Operation manual enclosed



Cover sheet made of polypropylene laminated mat paper and 50 sheets of printed mat paper (A4 size) bound with hot-melt adhesive

Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1 Printed paper	1	Mat paper	200g	Paper, Calcium carbonate, Polyvinyl alcohol, Silica(40%), Talc(5%)
		Ink	2g	Phenol resin, Carbon black
2 Adhesive layer	1	Adhesive	2g	Ethylene vinyl acetate copolymer resin, Rosin ester resin
3 Cover sheet/hard cover	1	Polypropylene	6g	Polypropylene
		Mat paper	10g	Paper, Calcium carbonate, Polyvinyl alcohol, Silica(40%), Talc(5%)
		Ink	0.3g	Phenol resin, Carbon black

9-1 Printed circuit board



Flexible printed circuit board (FPC) + Reinforcing sheet

① Surface treatment

② C L

③ C C L

④ Reinforcing sheet

Polyimide resin

Adhesive

Copper circuit

Adhesive

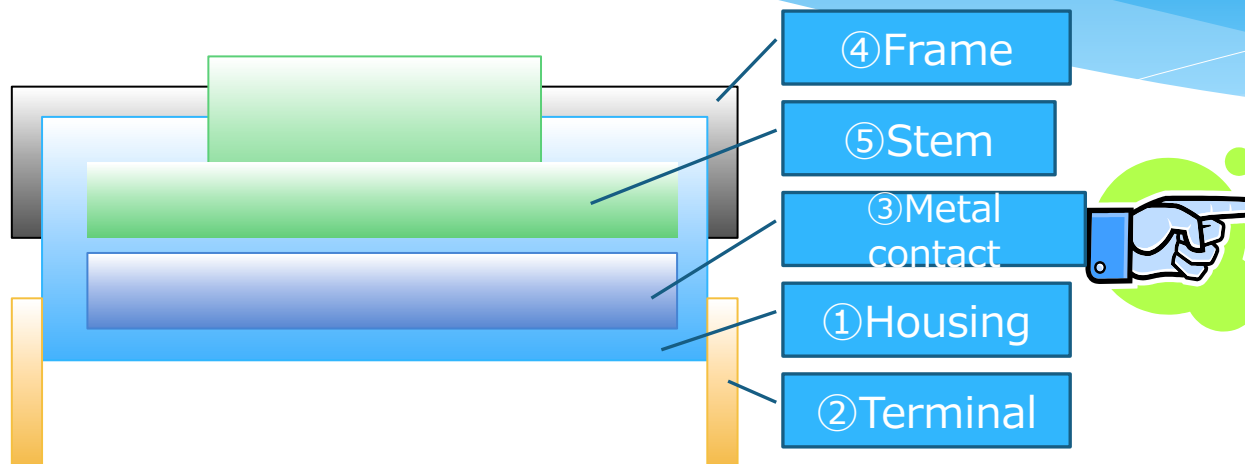
Polyimide resin

Adhesive

Polyimide resin

Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1 Surface treatment	1	Gold plating	0.1mg	Gold
		Nickel plating	1mg	Nickel (92%), Phosphorous(8%)
2 C L	1	Polyimide resin	3mg	Polyimide resin
		Adhesive	3mg	Epoxy resin
3 C C L	1	Copper circuit	11mg	Copper
		Adhesive	2mg	Epoxy resin
		Polyimide resin	5mg	Polyimide resin
4 Reinforcing sheet	1	Adhesive	1.3mg	Acrylic resin
		Polyimide resin	17.6mg	Polyimide resin

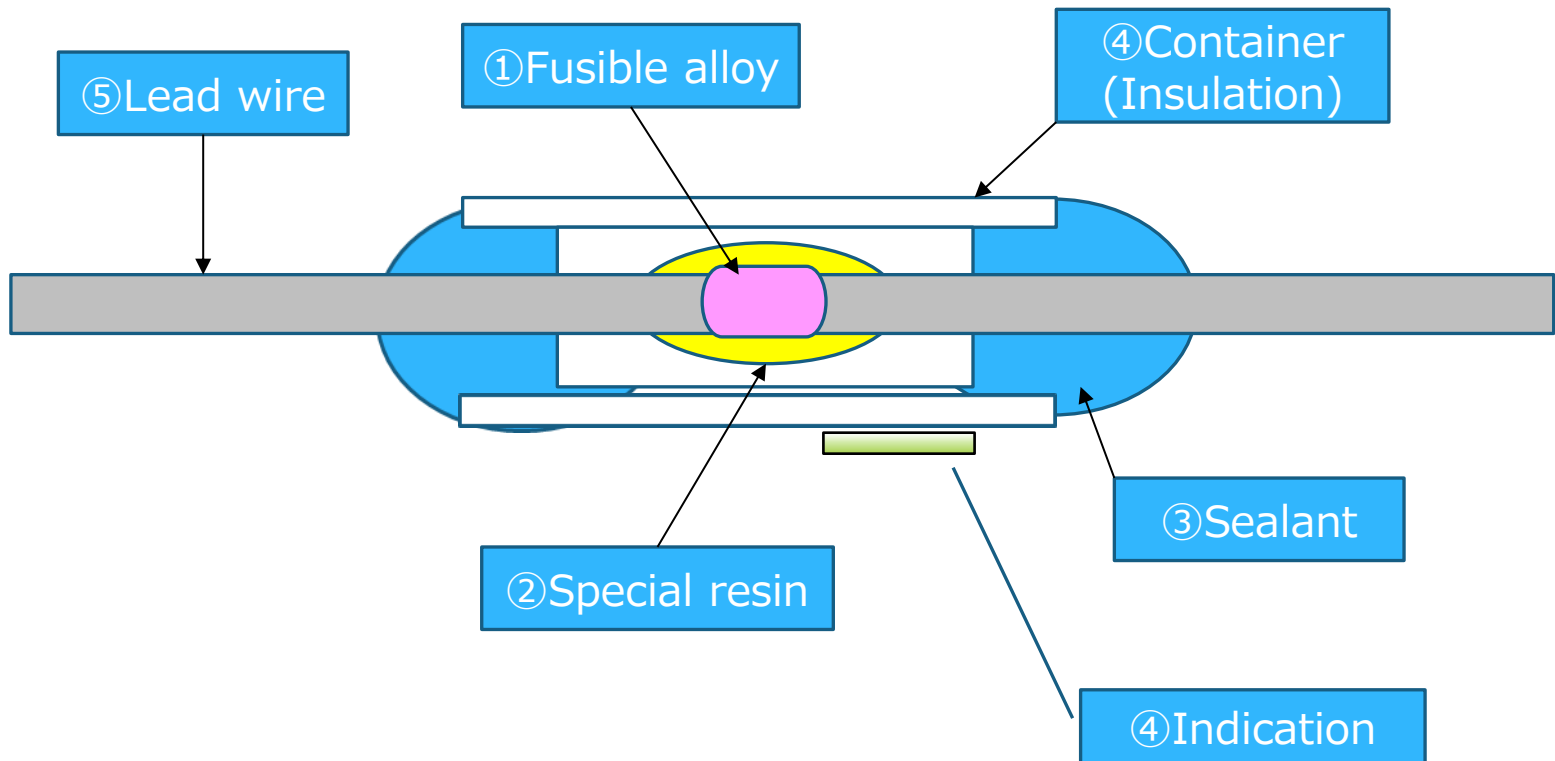
10-1 Switch



Metal contact has inverting spring mechanism. When the stem reverses on the stationary contact by the applied force, the electric circuit closes.

	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Housing	1	P P S resin	102m g	P P S resin, Glass fiber
2	Terminal	1	Free cutting brass	77.63mg	Copper(66%), Zinc, Lead(2%)
			Nickel plating	0.08mg	Nickel
			Silver plating	0.29mg	Silver
3	Metal contact	1	Copper alloy	13.79mg	Copper
			Silver plating	0.21mg	Silver
4	Frame	1	Stainless steel	30mg	Iron, Chromium, Nickel(8%)
5	Stem	1	P P S resin	62mg	P P S resin

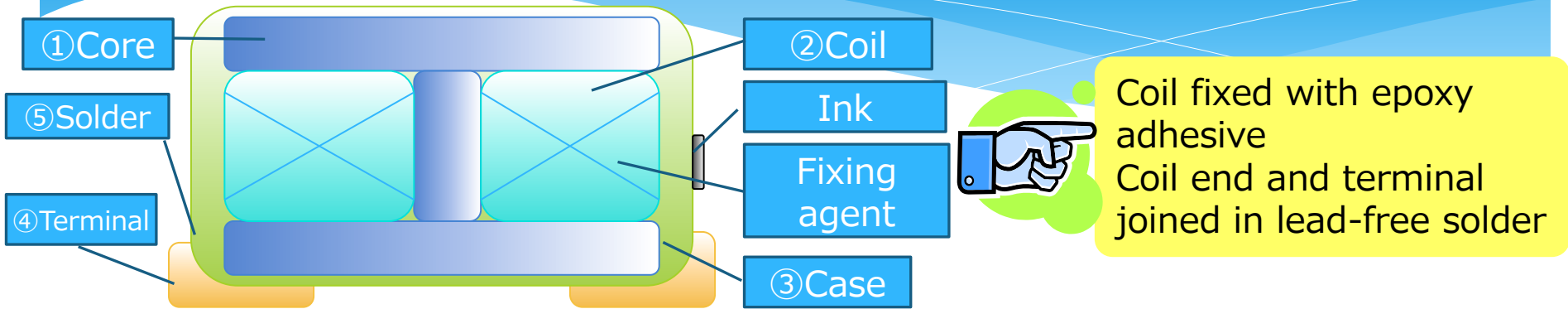
11-1 Thermal fuse



11-2 Thermal fuse

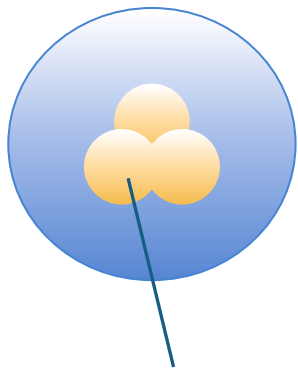
	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Fusible alloy	1	Tin	21.1 mg	Tin、Bismuth
2	Special resin	1	Rosin compound	1.0mg	Rosin
3	Sealant	1	Epoxy resin	15.7mg	Epoxy resin
4	Container (Insulation)	1	Alumina	23.5mg	Aluminum
			Phenolic resin	0.01mg	Phenolic resin (Indication)
5	Lead wire	1	Copper	199.3mg	Copper
			Plating(Tin)	6.7mg	Tin

12-1 Transformer



	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Core	1	Ferrite	0.36g	Iron oxide, Zinc oxide(20%), Nickel oxide(10%), Copper oxide(2%)
2	Coil	1	Copper	0.0475g	Copper
			Urethane	0.0025g	Urethane
			Epoxy resin	0.2629g	Epoxy resin
3	Case	1	Epoxy resin	0.53g	Epoxy resin, Brominated epoxy resin, Silica(70%)
			Ink	0.0001g	Phenol resin, Carbon black
4	Terminal	1	Copper	0.0806g	Copper
			Nickel plating	0.0005g	Nickel
			Tin plating	0.0039g	Tin
5	Solder	1	Lead-free solder	0.012g	Tin, Copper(3.5%)

13-1 Wire



①Core wire



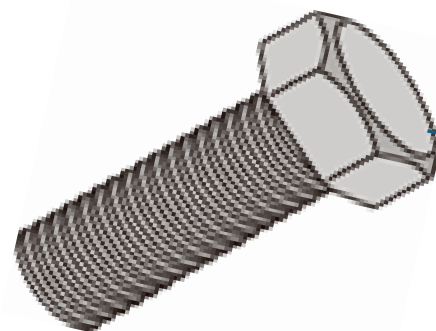
②Wire insulation



Twisted core wire (3 annealed copper strands) covered with PVC wire insulation

	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Core wire	1	Annealed copper wire	6g	Copper(2g×3)
			Vinyl chloride resin	0.8g	PVC, Calcium carbonate, Phthalate ester (DEHP) (15%), Carbon black

14-1 Screw

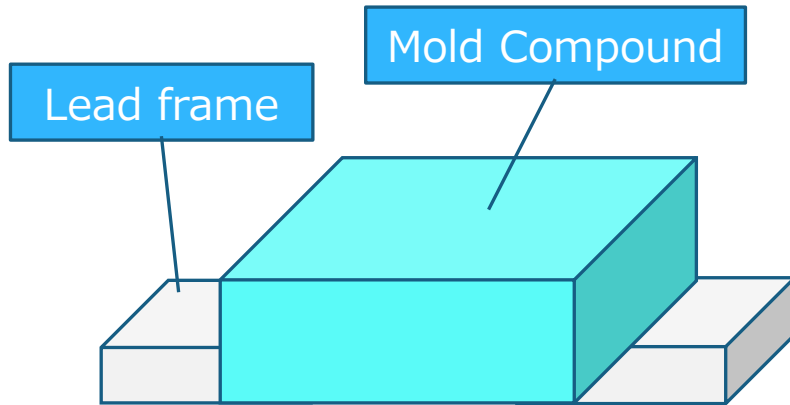


Stainless steel

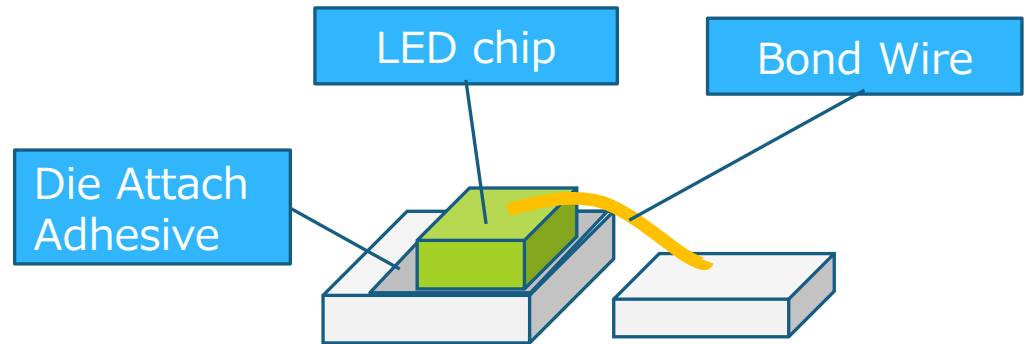
	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Screw	1	Stainless	3g	Nickel(10.5%), Iron, Chromium, manganese

15-1 LED chip

Product appearance



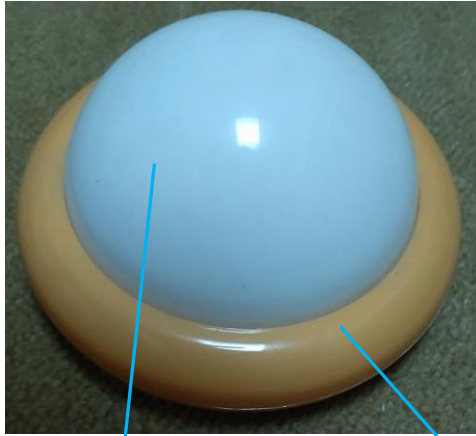
Internal configuration



	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Lead frame	1	Copper alloy	80mg	Copper (95%), Iron, Nickel (2%)
		1	Tin plating	4mg	Tin
2	Die Attach Adhesive	1	Conductive adhesive	5mg	Silver (95%), Epoxy resin
3	LED chip	1	Non-ferrous metal	10mg	Gallium arsenide phosphide (90%), Copper (4%), Silicone(6%)
5	Bond Wire	1	Gold	2mg	Gold
6	Mold Compound	1	Sealing material	34mg	Epoxy resin

16-1 Drawing of touch light

Wire 10cm 3pc
(Purchase)

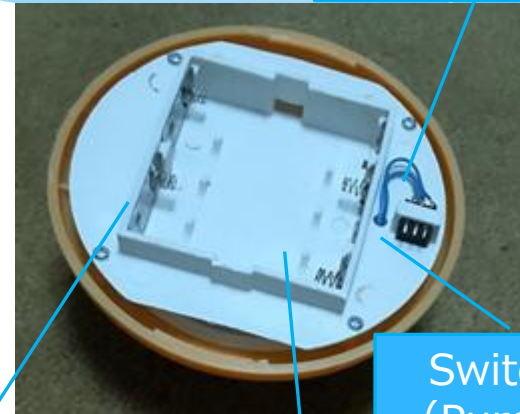


Housing1
(In-house
molding)

Housing2
(In-house
molding)



Housing3
(In-house
molding)

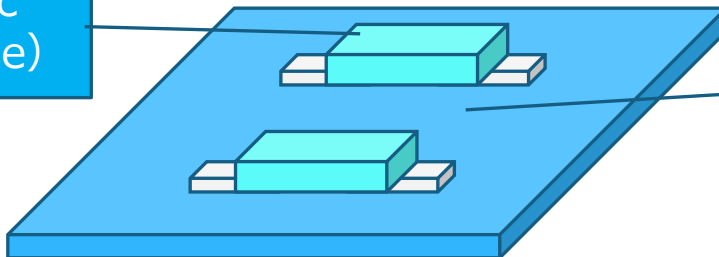


Screw 4pc
(Purchase)

Inner housing
(In-house
molding)

Switch 1pc
(Purchase)

LED 2pc
(Purchase)



Printed circuit board
(Purchase)

16-2 Molding material information

SDS & chemSHERPA-CI of Housing1 (Polypropylene)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture : Mixture
 Chemical name or common name : Propylene
 Composition/Information on ingredients

Ingredients	Composition (wt%)	CAS No.	Japan CSCL: Existing Chemical Substances (MITI Number)
Propylene	>99	9010-79-1	6-10
Additives (Antioxidants, etc.)	<1	CBI	Existing

※Japan CSCL : Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Chemical Substances Control Law ; CSCL)

	Main substance ※The red character shows that it is chemSHERPA declarable substance.	CAS No.	Max. content rate
1	Polypropylene (Optional reporting substance)	9010-79-1	99.2%
2	Phenol, 4,4',4''-(1-methyl-1-propanyl-3-ylidene)tris[2-(1,1-dimethylethyl)-5-methyl-	1843-03-4	0.8%

SDS & chemSHERPA-CI of Housing2,Housing3 and Inner housing (Polystyrene)

Components

Material	CAS Number	Percent
Polystyrene	9003-53-6	95 – 100
Pentane* (n-pentane, isopentane, cyclopentane)	109-66-0 78-78-7/287-92-3	<2.0

	Main substance ※The red character shows that it is chemSHERPA declarable substance.	CAS No.	Max. content rate
1	Polystyrene (Optional reporting substance)	9003-53-6	99.5%
2	n-pentane (Optional reporting substance)	109-66-0	0.25%
3	Isopentane (Optional reporting substance)	78-78-7	0.15%
4	cyclopentane (Optional reporting substance)	287-92-3	0.1%

16-3 Component of touch light

	Component name	Q'ty	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Housing1	1	Polypropylene	50g	Polypropylene, Antioxidant (0.2%) ※It has been confirmed by the supplier that there is a maximum of 0.2% residual antioxidant.
2	Housing2	1	Polystyrene	15g	Polystyrene ※It has been confirmed by the supplier that there are no residual substances in the article.
3	Housing3	1	Polystyrene	25g	Polystyrene ※It has been confirmed by the supplier that there are no residual substances in the article.
4	Inner housing	1	Polystyrene	10g	Polystyrene ※It has been confirmed by the supplier that there are no residual substances in the article.
5	Screw	4	-	3g	Refer to Illustrated Casebook "Screw"
6	Switch	1	-	286mg	Refer to Illustrated Casebook "Switch"
7	Wire	5cm×3pc	-	1.36g	Refer to Illustrated Casebook "Wire"
8	Printed circuit board	1	-	44mg	Refer to Illustrated Casebook "Printed circuit board"
9	LED	2	-	135mg	Refer to Illustrated Casebook "LED"

Procedure for creating chemSHERPA-AI for touch light

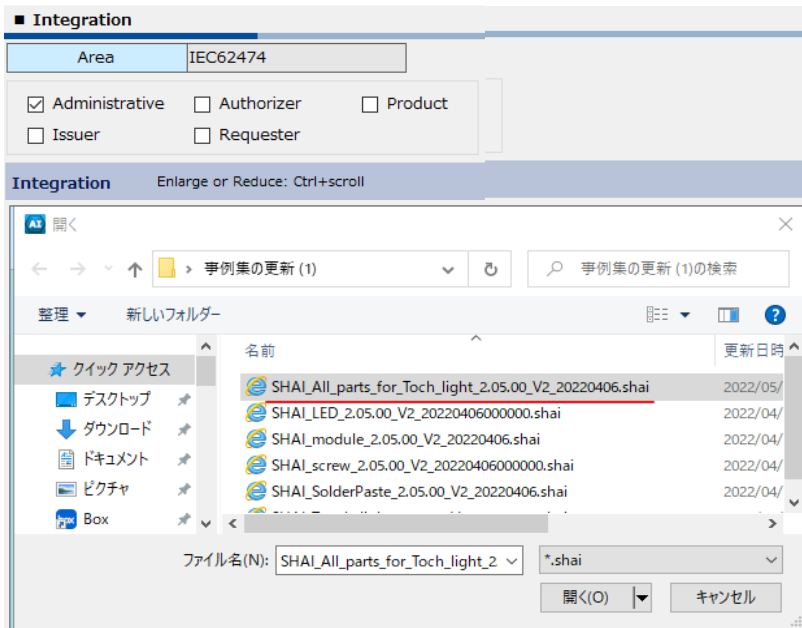
1. Confirm the substances remaining after conversion of PP resin / PS resin molded products with the supplier
2. Create chemSHERPA-AI for Housing1, Housing2, Housing3, and Inner Housing
3. Integrate each component

16-4 Reference: Touch light integration procedure

The following SHAI file with all parts required for integration is included in the touch light casebook.
SHAI_All_parts_for_Toch_light_2.10.00_V2ex_20240930000000.shai

Product/Component														Citing		Delete	Add			
<input checked="" type="checkbox"/> Product <input checked="" type="checkbox"/> Administrative																				
All	CPS	CPL	Product											Data entry status						
			Product name	Product number	Manufacturer name	Mass	Unit of mass	Product series name	Reporting unit	Remarks	Overall content flag	Valid From	Revision date	Revision history	Composition	Compliance				
<input type="checkbox"/>																				
1	<input checked="" type="checkbox"/>	Show	Show	Wire	HJ4567	ABC Corporation	6.8	g	▼		m	▼		Y	2022-04-06			1	2022-09-21 13:23Finalize(with ...	2022-09-21 13:24Fi
2	<input checked="" type="checkbox"/>	Show	Show	Housing 1	Housing-1		50	g	▼		piece	▼		N	2022-04-06			1	2022-09-21 13:25Finalize(with ...	2022-09-21 13:25Fi
3	<input checked="" type="checkbox"/>	Show	Show	Housing 2	Housing-2		15	g	▼		piece	▼		N	2022-04-06			1	2022-09-21 13:26Finalize(with ...	2022-09-21 13:26Fi
4	<input checked="" type="checkbox"/>	Show	Show	Housing 3	Housing-3		25	g	▼		piece	▼		N	2022-04-06			1	2022-09-21 13:27Finalize(with ...	2022-09-21 13:29Fi
5	<input checked="" type="checkbox"/>	Show	Show	Internal housing	Internal-housing		10	g	▼		piece	▼		N	2022-04-06			1	2022-09-21 13:31Finalize(with ...	2022-09-21 13:37Fi
6	<input checked="" type="checkbox"/>	Show	Show	Switch	KLM7890	ABC Corporation	0.286	g	▼		piece	▼		Y	2022-04-06			1	2022-09-21 13:47Finalize(with ...	2022-09-21 13:40Fi
7	<input checked="" type="checkbox"/>	Show	Show	Surface mount L...	LED-001	ABC Corporation	135	mg	▼		piece	▼		N	2022-04-06				2022-09-21 13:44Finalize(with ...	2022-09-21 13:41Fi
8	<input checked="" type="checkbox"/>	Show	Show	Printed circuit b...	PWBOARD-001	ABC Corporation	44	mg	▼		piece	▼		N	2022-04-06			1	2022-09-21 13:42Finalize(with ...	2022-09-21 13:42Fi
9	<input checked="" type="checkbox"/>	Show	Show	SUS-Screw	screw		3	g	▼		piece	▼		N	2022-04-06				2022-09-21 13:43Finalize(with ...	2022-09-21 13:43Fi

Integration is simplified by selecting only the SHAI file with all parts required for integration.



■ Integration

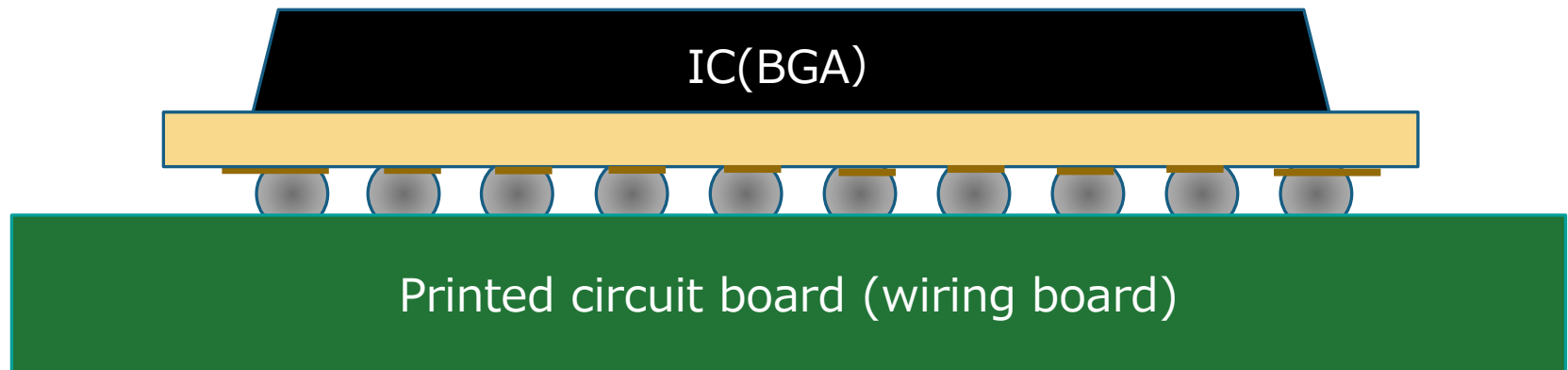
Area	IEC62474	
<input checked="" type="checkbox"/> Administrative	<input type="checkbox"/> Authorizer	<input type="checkbox"/> Product
<input type="checkbox"/> Issuer	<input type="checkbox"/> Requester	

Integration Enlarge or Reduce: Ctrl+scroll

Name of file	Amount used	Reporting unit	Quantity	Subject area	Data entry status		Consolidated version
					Composition	Compliance	
SHAI_20220921134909_HIJ4567_001.xml		m		IEC62474	2022-09-21 13:23 Finalize(with SCIP...	2022-09-21 13:24 Finalize(with SCIP...	2.06.00
SHAI_20220921134909_Housing-1_002.xml		piece		IEC62474	2022-09-21 13:25 Finalize(with SCIP...	2022-09-21 13:25 Finalize(with SCIP...	2.06.00
SHAI_20220921134909_Housing-2_003.xml		piece		IEC62474	2022-09-21 13:26 Finalize(with SCIP...	2022-09-21 13:26 Finalize(with SCIP...	2.06.00
SHAI_20220921134909_Housing-3_004.xml		piece		IEC62474	2022-09-21 13:27 Finalize(with SCIP...	2022-09-21 13:29 Finalize(with SCIP...	2.06.00
SHAI_20220921134909_Internal-housing_005.xml		piece		IEC62474	2022-09-21 13:31 Finalize(with SCIP...	2022-09-21 13:37 Finalize(with SCIP...	2.06.00
SHAI_20220921134909_KLM7890_006.xml		piece		IEC62474	2022-09-21 13:47 Finalize(with SCIP...	2022-09-21 13:40 Finalize(with SCIP...	2.06.00
SHAI_20220921134909_LED-001_007.xml		piece		IEC62474	2022-09-21 13:44 Finalize(with SCIP...	2022-09-21 13:41 Finalize(with SCIP...	2.06.00
SHAI_20220921134909_PWBOARD-001_008.xml		piece		IEC62474	2022-09-21 13:42 Finalize(with SCIP...	2022-09-21 13:42 Finalize(with SCIP...	2.06.00
SHAI_20220921134909_screw_009.xml		piece		IEC62474	2022-09-21 13:43 Finalize(with SCIP...	2022-09-21 13:43 Finalize(with SCIP...	2.06.00

17-1 IC module

This case illustrates the mounting of a semiconductor IC (BGA) on a printed circuit board (wiring board) using solder paste.

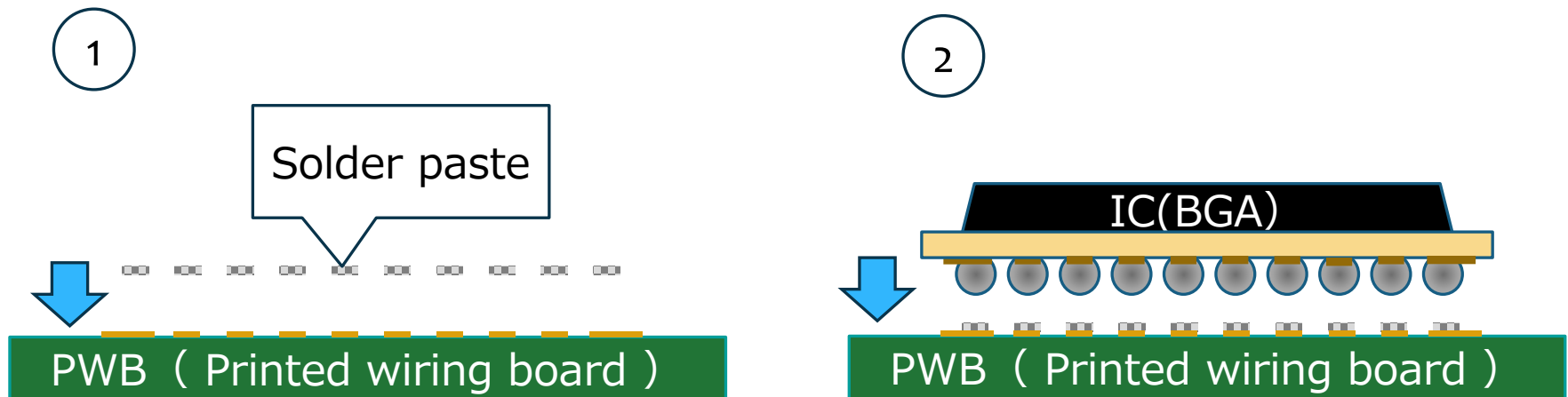


For further details, please refer to the implementation "Mounting Process of electronic parts on printed wiring boards" issued by JAMP as guidance for the management of chemical substances in products and information communication / disclosure.

17-1 IC module

The component configuration and process are shown below.

- ① Solder paste is mounted on the land of the PWB (printed wiring board).
- ② After that, an IC (BGA) is mounted.



17-2 Components of IC (BGA) and Printed circuit board

IC BGA

	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Bond Wire	1	Copper alloy	2.0142mg	Copper
2	Die Attach Adhesive	1	Conductive adhesive	7.1494mg	Silver (82%)
3	Mold Compound	1	Sealing material	340.6948mg	Silica(75%), Epoxy, Organic phosphorus (0.2%)
4	Semiconductor Device	1	Non-ferrous metal	22.4687mg	Silicon
5	Solder Ball	1	Lead-free solder alloy	173.8345mg	Copper (0.5%), Silver (1.2%)
6	Substrate	1	Epoxy	70.5056mg	Epoxy, Silica(70%)
		1	Copper alloy	46.1628mg	Copper
		1	Plating material	4.4528mg	Nickel
		1	Plating material	0.5789mg	Gold

Printed circuit board

	Part	Number	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	Surface treatment	1	Gold plating	0.1mg	Gold
			Nickel plating	1mg	Nickel (92%), Phosphorous(8%)
2	C L	1	Polyimide resin	3mg	Polyimide resin
			Adhesive	3mg	Epoxy resin
3	C C L	1	Copper circuit	11mg	Copper
			Adhesive	2mg	Epoxy resin
			Polyimide resin	5mg	Polyimide resin
4	Reinforcing sheet	1	Adhesive	1.3mg	Acrylic resin
			Polyimide resin	17.6mg	Polyimide resin

17-3 Components of solder paste

Solder paste is used in the process of joining terminals between printed wiring boards and IC (semiconductors).

For non-article items such as solder paste, use chemSHERPA-CI to obtain composition information.

Content status on declarable substances *		1 This product contains the substance(s) (including candidates) listed in the relevant standard and to be notified.																			
Composition		Enlarge or Reduce: Ctrl+scroll										Update substance information			Delete		Delete Pseudo Substances & Misc			All clear	
Substance					Except for Declarable Substances (including candidates)	Relevant standard												Candidate Substances			
Substance name		CAS No.	Maximum content rate (%)	Conversion chemical	Remarks	<input type="checkbox"/> Select all	LR01	LR02	LR03	LR04	LR05	LR06	LR07	LR08	LR09	IC01	IC02	CD01			
Select		Add		Select		Applicable	CSCL	TSCA	ELV	EU-RoHS	POPs	SVHC	REACH Annex XVII	MDR	China-RoHS	GADSL	IEC 62474	CDS			
*		*	*																		
1 Lead; Lead powder; Lead massive		7439-92-1	85			<input type="checkbox"/>			1	1		C	1	1	1	D/P	R				
2 Silver (Ag)		7440-22-4	2			<input type="checkbox"/>										D/P					
3 Rosin		8050-09-7	7.5	Volatile	Mass change depending on joining conditions	<input type="checkbox"/>										D					
4 Hexafluorosilicic acid		16961-83-4	1.5	Volatile	Mass change depending on joining conditions	<input type="checkbox"/>										D/P					
5 ProPan-2-ol		67-63-0	4	Volatile	Mass change depending on joining conditions	<input checked="" type="checkbox"/>															

The mass change should be reflection in the data.

In this case as reference, the calculation assumes that Rosin gasifies by 20%. If customer will make the data, the individual companies should analyze the mass change or inquire with the manufacturer of the product to create their own data.

17-4 Reflects to data solder mass change due to solder joints

Composition	Composition ratio (%)	*After reflow (%)	Converted value (%)	CAS#	Specific gravity (mg/mm ³)	Volume (mm ³)	Number of holes	Mass(mg)
Lead	85.0	85.0	91.1040%	7440-22-4	11.34	0.1767	100	182.5672
Silver	2.0	2.0	2.1436%	7440-50-8	10.50	0.1767	100	3.9775
Rosin	7.5	6.0	6.4309%	8050-09-7	1.07	0.1767	100	1.2160
Hexafluoro silicic acid	1.5	0.3	0.3215%	16961-83-4	1.38	0.1767	100	0.0784
ProPan-2-ol	4.0	0%	0%	67-63-0	—	—	—	—
Total	100	93.3	100%	—	—	—	—	187.8391

$$6.0 \div 93.3 \div 6.4309\%$$

*Mass is required in AI

Example Metal mask aperture: Metal mask thickness (0.1mm) aperture diameter (1.5mm) 100Pin

Note: Please reflect this in the data according to the actual situation.

17-5 Translates Solder paste data from chemSHERPA-CI to AI

Data entry support tool for the chemSHERPA-AI chemSHERPA-CI Quotation

■ chemSHERPA-CI

chemSHERPA-CI info Enlarge or Reduce: Ctrl+scroll

Article Tool

1 Add Delete

	Name of file	Product name	Content status on declarable substances	External list version	Data entry status	Presence of Conversion chemical
1	SHCI_20250108170937_000-000-001...	High Lead solder Paste	1. Content	2.10.00	2025-01-08 16:49Fi...	Exist

2 Display composition info When you press this button, the composition information of the above products is displayed.

	Product name	Substance Name	CAS No.	Content rate(%) (CI)	Conversion chemical (CI)	Conversion chemical (External list)	Content rate(%) (Posted to AI)	Remarks	Quote
1	High Lead solder Paste	Lead; Lead powder; Lead massive	7439-92-1	85			91.104		<input checked="" type="checkbox"/>
2	High Lead solder Paste	Silver (Ag)	7440-22-4	2			2.1436		<input checked="" type="checkbox"/>
3	High Lead solder Paste	Rosin	8050-09-7	7.5	Volatile		6.4309	Mass change depending on joining conditions	<input checked="" type="checkbox"/>
4	High Lead solder Paste	Hexafluorosilicic acid	16961-83-4	1.5	Volatile		0.3215	Mass change depending on joining conditions	<input checked="" type="checkbox"/>
5	High Lead solder Paste	ProPan-2-ol	67-63-0	4	Volatile			Mass change depending on joining conditions	<input type="checkbox"/>

The information communicated in the column of "Conversion chemical" does not cover all substances or phenomena that change during the conversion process. The information should be considered as a piece of reference information, and chemSHERPA-AI data editors should make information after grasping and understanding the phenomena that occur during the conversion process.

Return to Composition Quote

3

If the mass of the conversion chemical decreases due to volatilization, the content rate also changes.

Part	Num ber	Material	Mass	Main substance ※The red character shows that it is chemSHERPA declarable substance.
1	High Lead Solder Paste	Lead	182.5672mg	Lead (85% → 91.104%)
		Silver	3.9775mg	Silver (2% → 2.1436%)
		Rosin	1.2160mg	Rosin (7.5% → 6.4309%)
		Hexafluorosilic ic acid	0.0784mg	Hexafluorosilicic acid (1.5% → 0.3215%)

<https://chemsherpa.net/>

