

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Trade name Ryton® R-4-230BL PPS Compound

1.2 Relevant identified uses of the substance or mixture and uses advised against

Uses of the Substance/Mixture

- Manufacture of articles by injection and extrusion

1.3 Details of the supplier of the safety data sheet

Company

SOLVAY (SHANGHAI) Co., Ltd
3966, JINDU RD, XINZHUANG INDUSTRIAL ZONE, MINHANG DISTRICT, SHANGHAI, CHINA 201108
Tel: +86 21 2408 9045

E-mail address

manager.sds@solvay.com

1.4 Emergency telephone number

400 120 6011 (toll-free, access from China only)
China (Domestic Only): +86 532 8388 9090 (Qingdao)
MULTI LINGUAL EMERGENCY NUMBER (24/7)
Europe/Latin America/Africa : +44 1235 239 670 (UK)
Middle East/Africa speaking Arabic : +44 1235 239 671 (UK)
Asia Pacific : +65 3158 1074 (Singapore)
China : 400 120 6011 (toll-free, access from China only)
North America : +1 800 424 9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

| | | |
|--------------------------|-------------------------------|-----------|
| <u>Appearance</u> | <u>Form:</u> | pellets |
| | <u>Physical state:</u> | solid |
| | <u>Colour:</u> | black |
| | <u>Odour</u> | odourless |

GHS Classification and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

- Not classified as hazardous product under the regulation above.

2.2 Label elements

GHS Classification and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

- Not required to be labelled under the local regulation including regulation above.

2.3 Other hazards which do not result in classification

None known.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

Information on Components and Impurities

| Chemical name | CAS-No. | Identification number | GHS Classification | Concentration [%] |
|-------------------------|------------|-----------------------|--------------------|---------------------|
| Polyphenylene sulfide | 26125-40-6 | Not applicable | Not classified | $\geq 50 - \leq 60$ |
| Glass, oxide, chemicals | 65997-17-3 | Not applicable | Not classified | $\geq 40 - < 50$ |
| Carbon black | 1333-86-4 | Not applicable | Not classified | $\geq 0.5 - < 1$ |

SECTION 4: First aid measures

4.1 Description of first aid measures

In case of inhalation

- If symptoms persist, call a physician.

In case of skin contact

- Wash off with soap and water.
- Wash contaminated clothing before re-use.
- If symptoms persist, call a physician.
- Cool skin rapidly with cold water after contact with hot polymer.
- Do not peel polymer from the skin.
- Obtain medical attention.

In case of eye contact

- Flush eyes with running water for several minutes, while keeping the eyelids wide open.
- If eye irritation persists, consult a specialist.

In case of ingestion

- Never give anything by mouth to an unconscious person.
- If a large amount is swallowed, get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation

Effects

- Mechanical irritation from the particulates generated by the product.
- Thermal decomposition can lead to release of hazardous gases and vapors

In case of skin contact

Effects

- Mechanical irritation from the particulates generated by the product.

In case of eye contact

Effects

- Mechanical irritation from the particulates generated by the product.

In case of ingestion

Effects

- Low ingestion hazard.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

- powder
- Foam
- Water
- Water spray
- Carbon dioxide (CO₂)

Unsuitable extinguishing media

- None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting

- Combustible material
- In a fire, the polymer melts, producing droplets which may propagate fire.
- Once started, a fire will tend to self extinguish (see section 9).
- Heating can release hazardous gases.

Hazardous combustion products:

- Carbon dioxide (CO₂)
- Sulphur dioxide
- Carbon monoxide

5.3 Advice for firefighters

Special protective equipment for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Fire fighters must wear fire resistant personnel protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel

- Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders

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- Sweep up to prevent slipping hazard.
- Avoid dust formation.
- Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

- Should not be released into the environment.
- The product should not be allowed to enter drains, water courses or the soil.

6.3 Methods and materials for containment and cleaning up

- Sweep up and shovel into suitable containers for disposal.
- Avoid dust formation.
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

6.4 Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Take measures to prevent the build up of electrostatic charge.
- Ensure all equipment is electrically grounded before beginning transfer operations.
- Use only equipment and materials which are compatible with the product.
- To avoid thermal decomposition, do not overheat.

Hygiene measures

- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

Dust explosion class

- St1

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Keep container tightly closed.
- Keep away from heat and sources of ignition.
- Keep away from open flames, hot surfaces and sources of ignition.
- To avoid thermal decomposition, do not overheat.
- Avoid dust formation.
- Do not smoke.
- Refer to protective measures listed in sections 7 and 8.

7.3 Specific end use(s)

- For further information, please contact:
- Supplier

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with national occupational exposure limits

| Components | Value type | Value | Basis |
|--|------------|---------|---|
| Carbon Black | PC-TWA | 4 mg/m3 | Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents. |
| Form of exposure : Total dust G2B - Possibly carcinogenic to humans | | | |

Components with other occupational exposure limits

| Components | Value type | Value | Basis |
|---|------------|-------------------------------|---|
| Particles (insoluble or poorly soluble) not otherwise specified | TWA | 10 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : Inhalable particulate matter | | | |
| Particles (insoluble or poorly soluble) not otherwise specified | TWA | 3 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : Respirable particulate matter | | | |
| Glass, oxide, chemicals | TWA | 1 fibres per cubic centimeter | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : fibres | | | |
| Glass, oxide, chemicals | TWA | 5 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : Inhalable particulate matter | | | |
| Carbon Black | TWA | 3 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : Inhalable particulate matter | | | |
| Glass, oxide, chemicals | TWA | 5 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : Inhalable particulate matter | | | |

8.2 Exposure controls

Control measures

Engineering measures

- Provide local ventilation appropriate to the product decomposition risk (see section 10).
- Provide appropriate exhaust ventilation at places where dust is formed.
- Refer to protective measures listed in sections 7 and 8.

Individual protection measures

Respiratory protection

- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Use only respiratory protection that conforms to international/ national standards.

Hand protection

- When handling hot material, use heat resistant gloves.

Eye protection

- Safety glasses with side-shields
- Dust proof goggles, if dusty.

Skin and body protection

- Long sleeved clothing

Hygiene measures

- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

Protective measures

- When using do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|--|
| <u>Appearance</u> | <u>Form:</u> pellets |
| | <u>Physical state:</u> solid |
| | <u>Colour:</u> black |
| <u>Odour</u> | odourless |
| <u>Odour Threshold</u> | No data available |
| <u>pH</u> | Not applicable |
| <u>Melting point/freezing point</u> | <u>Melting point/range:</u> 285 °C |
| <u>Initial boiling point and boiling range</u> | <u>Boiling point/boiling range:</u> Not applicable |
| <u>Flash point</u> | Not applicable |
| <u>Evaporation rate (Butylacetate = 1)</u> | No data available |
| <u>Flammability (solid, gas)</u> | May form combustible dust concentrations in air, The product is not flammable. |

| | |
|--|---|
| <u>Flammability/Explosive limit</u> | No data available |
| <u>Auto-ignition temperature</u> | No data available |
| <u>Vapour pressure</u> | Not applicable |
| <u>Vapour density</u> | Not applicable |
| <u>Density</u> | No data available |
| <u>Relative density</u> | No data available |
| <u>Solubility</u> | <u>Water solubility:</u> negligible |
| <u>Partition coefficient: n-octanol/water</u> | Not applicable |
| <u>Decomposition temperature</u> | > 400 °C Extended period of exposure (ca. 1 hour). |
| <u>Viscosity</u> | No data available |
| <u>Explosive properties</u> | No data available |
| <u>Oxidizing properties</u> | No data available |

9.2 Other information

| | |
|---------------------------------------|-----|
| <u>Dust explosion constant</u> | St1 |
|---------------------------------------|-----|

SECTION 10: Stability and reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal conditions.

10.3 Possibility of hazardous reactions

- No dangerous reaction known under conditions of normal use.

polymerisation

- Hazardous polymerisation does not occur.

10.4 Conditions to avoid

- Heat, flames and sparks.
- To avoid thermal decomposition, do not overheat.
- Avoid dust formation.

10.5 Incompatible materials

- Strong oxidizing agents

10.6 Hazardous decomposition products

- Hydrocarbons
- Alcohols
- Aldehydes
- Ketones
- The release of other hazardous decomposition products is possible.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity No data available

Acute inhalation toxicity No data available

Acute dermal toxicity No data available

Acute toxicity (other routes of administration) No data available

Skin corrosion/irritation No data available

Serious eye damage/eye irritation No data available

Respiratory or skin sensitisation No data available

Mutagenicity

Genotoxicity in vitro No data available

Genotoxicity in vivo No data available

Carcinogenicity No data available

Toxicity for reproduction and development

Toxicity to reproduction/Fertility No data available

Developmental Toxicity/Teratogenicity No data available

STOT

STOT - single exposure No data available

STOT - repeated exposure No data available

Experience with human exposure No data available

Aspiration toxicity No data available

Further information

Because the components are encapsulated in the resin and may not be bioavailable in the body, they may not exert the above mentioned health effects. Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components.

SECTION 12: Ecological information

12.1 Toxicity

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Aquatic Compartment

Acute toxicity to fish No data available

Acute toxicity to daphnia and other aquatic invertebrates No data available

Toxicity to aquatic plants No data available

Toxicity to microorganisms No data available

Chronic toxicity to fish No data available

Chronic toxicity to daphnia and other aquatic invertebrates No data available

12.2 Persistence and degradability

Abiotic degradation No data available

Physical- and photo-chemical elimination No data available

Biodegradation No data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water No data available

Bioconcentration factor (BCF) No data available

12.4 Mobility in soil

Adsorption potential (Koc) No data available

Known distribution to environmental compartments No data available

12.5 Results of PBT and vPvB assessment No data available

12.6 Other adverse effects No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- In accordance with local and national regulations.
- Waste characterizations and compliance with applicable laws and regulations are the responsibility of the waste generator.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.
- Can be landfilled or incinerated, when in compliance with local regulations.

- Do not dispose of waste product into drains or watercourses.

Advice on cleaning and disposal of packaging

- Empty containers.
- Dispose of as unused product.
- For unused and uncontaminated product, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or other thermal destruction device or industrial landfill.

SECTION 14: Transport information

CN DG

not regulated

IMDG

not regulated

IATA

not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Following last version of regulations are applicable for the chemical classification, SDS and label:

- General Rule for classification and hazard communication of chemicals, GB 13690
- Series standards of Safety rules for classification, precautionary labeling and precautionary statements of chemicals, GB 30000.2~GB 30000.29
- General rules for preparation of precautionary label for chemicals, GB 15258
- Safety data sheet for chemical products—Content and order of sections, GB/T 16483
- Decree No. 591 of the State Council of the People's Republic of China: Regulations on the Control over Safety of Hazardous Chemicals
- List of dangerous goods GB12268
- Classification and code of dangerous goods GB6944

Other regulations

- Law on the Prevention and Control of Occupational Diseases

Notification status

| Inventory Information | Status |
|--|--|
| United States TSCA Inventory | - Listed as active on the TSCA inventory |
| Canadian Domestic Substances List (DSL) | - Listed on Inventory |
| Australia Inventory of Chemical Substances (AICS) | - Listed on Inventory |
| Japan. CSCL - Inventory of Existing and New Chemical Substances | - In compliance with the inventory |
| Korea. Korean Existing Chemicals Inventory (KECI) | - Listed on Inventory |
| China. Inventory of Existing Chemical Substances in China (IECSC) | - Listed on Inventory |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | - One or more components not listed on inventory |
| EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH) | - "When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, |

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exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

- PC-TWA: Permissible concentration - time weighted average
- TWA: 8-hour, time-weighted average
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Instructions for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- GHS/CLP/SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.