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| SAFETY DATA SHEET | |  |
| TECHNYL A 20 V35 NATURAL | | |
| Revision: 2.01 CN (EN) | Issuing date: 2014-01-03 | |

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

1.1 Product identifier

Trade name : TECHNYL A 20 V35 NATURAL

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

Uses of the Substance/Mixture : Specific use(s): Manufacture of articles by injection and extrusion

Uses advised against : Not permitted in toys or part of toys, Medical devices, Do not use where contact with food or drinking water is possible.

1.3 Details of the supplier of the safety data sheet

Company : Solvay (Shanghai) Engineering Plastic Co., Ltd
No. 3966 Jindu Road, Xinzhuang Industrial Zone Shanghai 201108 China
Tel : +86 21 54 83 17 62
Fax : +86 21 54 42 71 07

E-mail address : information.fds@solvay.com

1.4 Emergency telephone number

MULTI LINGUAL EMERGENCY NUMBER (24/7)
Europe/America/Africa : +44 1235 239 670 (UK)
Middle East/Africa speaking Arabic : +44 1235 239 671 (UK)
Asia Pacific : +65 3158 1074 (Singapore)
China : +86 10 5100 3039 (Beijing)

China (Domestic Only): +86 532 8388 9090 (Qingdao)

China (Domestic Only): +86 532 8388 9090 (Qingdao)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Skin sensitization, Category 1 H317: May cause an allergic skin reaction.

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2.2 Label elements

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Hazardous products which must be listed on the label:

- 9003-35-4 Phenol, formaldehyde polymer

Pictogram



Signal word

: Warning

Hazard statements

: H317 May cause an allergic skin reaction.

Precautionary statements

: **General:**
None
Prevention:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P321 Specific treatment (see supplemental first aid instructions on this label).
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
Storage:
None
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

On thermal decomposition (pyrolysis) releases:
toxic gases

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable, this product is a mixture.

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3.2 Mixture

Chemical nature : Product based on polyamide 6.6 (CAS: 32131-17-2)

Information on Components and Impurities

| Chemical Name | CAS-No. | Identification number | GHS Classification | Concentration [%] |
|------------------------------|------------|-----------------------|--|-------------------|
| glass, oxide, chemicals | 65997-17-3 | not applicable | not classified | >= 30 - < 40 |
| red phosphorus | 7723-14-0 | not applicable | Flammable solids , Category 2 ; H228 Acute aquatic toxicity , Category 3 ; H402 Chronic aquatic toxicity , Category 3 ; H412 | >= 5 - < 10 |
| Phenol, formaldehyde polymer | 9003-35-4 | not applicable | Acute toxicity , Category 5 ; H313 Skin sensitization , Category 1 ; H317 | >= 1 - < 5 |
| hydroxyaluminium distearate | 300-92-5 | not applicable | Acute toxicity , Category 5 ; H313 Acute aquatic toxicity , Category 2 ; H401 | >= 0.3 - < 0.5 |

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Show this safety data sheet to the doctor in attendance.
First aider needs to protect himself.
- If inhaled : If breathed in, move person into fresh air.
Move to fresh air.
If symptoms persist, call a physician.
- Skin contact : Cool skin rapidly with cold water after contact with molten polymer.
Do not peel solidified product off the skin.
Consult a physician if necessary.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Seek medical advice.
- Ingestion : Do NOT induce vomiting.
Rinse mouth with water.
Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

no data available

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures

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Flash point : > 400 °C closed cup
Molten form

Auto-ignition temperature : > 450 °C

Flammability/Explosive limit : Lower flammability/explosion limit : not applicable, solid
Upper flammability/explosion limit : not applicable, solid

5.1 Extinguishing media

Suitable extinguishing media : All extinguishing agents can be used.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Combustible product, melts on heating.
Risk of fire spreading due to the flow of liquid which is already alight.
Harmful or toxic vapours are released.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self contained breathing apparatus for fire fighting if necessary.

Specific fire fighting methods : Cool the molten product.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

no data available

6.2 Environmental precautions

Environmental precautions : Do not allow uncontrolled discharge of product 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

Recovery : Sweep up and shovel.

Additional advice : Use mechanical handling equipment.

6.4 Reference to other sections

no data available

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Technical measures : Ground/bond container and receiving equipment.
- Advice on safe handling and usage : Ensure all equipment is electrically grounded before beginning transfer operations.

Local ventilation required when opening the packaging.
Use only in area provided with appropriate exhaust ventilation.
During the transformation process (melting) monitor the level of phosphine in the atmosphere (use a suitable detection device).
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
When using do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

- Technical Measures for storage : No special storage conditions required.

Storage conditions

- Recommended : Protect from moisture.
Store away from heat.

Local ventilation required when opening the packaging.
- Incompatible products : Oxidizing materials.

Packaging Measures

- Packaging materials - Recommended : Fibreboard, Paper bags
- Packaging conditions : Paper bag lined with a plastic film., Cardboard container lined with a plastic film., Big-bag

Storage stability

- Storage temperature : no data available

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace foreign Control Parameters

| Components | Value type | Value | Basis |
|-------------------------|------------|------------|---|
| glass, oxide, chemicals | TWA | 1fibre/cm3 | USA. ACGIH Threshold Limit Values (TLV) |

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| Form of exposure : Glass wool fibers Respirable fibers:length > 5 µm; aspect ratio >= 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination., Confirmed animal carcinogen with unknown relevance to humans | | | |
| glass, oxide, chemicals | TWA | 1fibre/cm3 | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : Continuous filament glass fibers Upper Respiratory Tract irritation, Respirable fibers:length > 5 µm; aspect ratio >= 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination., Not classifiable as a human carcinogen | | | |
| glass, oxide, chemicals | TWA | 5 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : Continuous filament glass fibers Inhalable fraction, Upper Respiratory Tract irritation, Not classifiable as a human carcinogen | | | |
| hydroxyaluminium distearate | TWA | 10 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| Eye, skin, & Upper Respiratory Tract irritation, Does not include stearates of toxic metals., Not classifiable as a human carcinogen | | | |
| hydroxyaluminium distearate | TWA | 1 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| Form of exposure : Respirable fraction Lower Respiratory Tract irritation, Pneumoconiosis, Neurotoxicity, Not classifiable as a human carcinogen, varies | | | |

8.2 Exposure controls

Control measures

Engineering measures : Vapour extraction at source
Apply technical measures to comply with the occupational exposure limits.

Personal protective equipment

Hand protection : Wear suitable gloves.
When handling hot material, use heat resistant gloves.

Eye protection : Safety glasses

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
When using do not eat, drink or smoke.

Protective measures : The protective equipment must be selected in accordance with current CEN

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standards and in cooperation with the supplier of the protective equipment.

During the transformation process (melting) monitor the level of phosphine in the atmosphere (use a suitable detection device).

Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards and/or risks that may occur during use.

Environmental exposure controls

General advice : Do not allow uncontrolled discharge of product into the environment.
The product should not be allowed to enter drains, water courses or the soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|--|
| Appearance | : Form : granules Physical state: solid Colour: natural colour |
| Odour | : none to very slight |
| Odour Threshold | : no data available |
| pH | : no data available |
| Melting point/range | : 250 - 270 °C |
| Flash point | : > 400 °C closed cup Molten form |
| Evaporation rate (Butylacetate = 1) | : no data available |
| Flammability (solid, gas) | : no data available |
| Flammability (liquids) | : no data available |
| Flammability/Explosive limit | : Lower flammability/explosion limit: not applicable, solid Upper flammability/explosion limit: not applicable, solid |
| Auto-ignition temperature | : > 450 °C Relative self-ignition temperature for solids Method: EU Test Guideline A16 |
| Vapour pressure | : no data available |
| Vapour density | : no data available |
| Density | : no data available |
| Solubility | : Water solubility : practically insoluble Solubility in other solvents: common organic solvents : insoluble |
| Partition coefficient: n-octanol/water | : no data available |

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Thermal decomposition : > 350 °C

Viscosity : Viscosity, dynamic :
not applicable, solid
Viscosity, kinematic :
not applicable, solid

Explosive properties : no data available

Oxidizing properties : Not considered as oxidizing

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

Decomposition products : On combustion or on thermal decomposition (pyrolysis) releases:
highly toxic gases.
(Carbon oxides (CO + CO₂)).
nitrogen oxides (NO_x).
Hydrogen cyanide (hydrocyanic acid)
PHOSPHINE

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| | | |
|---|---|---|
| Acute oral toxicity | : | According to the data on the components Not classified as harmful if swallowed Published data |
| Acute inhalation toxicity red phosphorus | : | no data available |
| Acute dermal toxicity red phosphorus | : | no data available |
| Phenol, formaldehyde polymer | : | LD50 : > 2,000 mg/kg - rat Published data |
| hydroxyaluminium distearate | : | LD50 : > 3,000 mg/kg - guinea pig By analogy Published data |
| Acute toxicity (other routes of administration) red phosphorus | : | no data available |

Skin corrosion/irritation

Skin irritation

| | | |
|-----------------------------|---|--|
| glass, oxide, chemicals | : | 4 h - rabbit No skin irritation Method: OECD Test Guideline 404 By analogy Information given is based on data obtained from similar substances. Unpublished reports |
| red phosphorus | : | 24 h - rabbit No skin irritation Method: OECD Test Guideline 404 Unpublished reports |
| hydroxyaluminium distearate | : | rabbit slight irritation Published data |

Serious eye damage/eye irritation

| | | |
|----------------|---|---|
| Eye irritation | : | rabbit Mild eye irritant Simplified study Unpublished internal reports |
|----------------|---|---|

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Respiratory or skin sensitization

Sensitisation

- red phosphorus : Buehler Test - guinea pig
Does not cause skin sensitization.
Method: OECD Test Guideline 406
Unpublished reports
- Phenol, formaldehyde polymer : Humans
The product is a skin sensitizer, sub-category 1A.
May cause sensitization by skin contact.
Published data

Mutagenicity

- Genotoxicity in vitro : No information available.
No information available.
- Genotoxicity in vivo : No information available.
No information available.

Carcinogenicity

Carcinogenicity

- glass, oxide, chemicals : No respirable material
No systemic effect expected
- red phosphorus : no data available

Toxicity for reproduction and development

Toxicity to reproduction/Fertility

- red phosphorus : no data available

Developmental Toxicity/Teratogenicity

- red phosphorus : no data available

STOT

STOT - single exposure

- glass, oxide, chemicals : Toxicology Assessment:
The substance or mixture is not classified as specific target organ toxicant, single exposure.
- red phosphorus : Toxicology Assessment:
The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

- red phosphorus : Remarks: no data available
- glass, oxide, chemicals : No respirable material
No systemic effect expected
- red phosphorus : no data available

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Neurological effects

Neurological effects
red phosphorus : no data available

Aspiration toxicity

Aspiration toxicity
red phosphorus : no data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish
glass, oxide, chemicals : LC50 - 96 h : > 1,000 mg/l - Danio rerio (zebra fish)
Method: OECD Test Guideline 203
Unpublished reports

red phosphorus : LC50 - 96 h : 33.2 mg/l - Danio rerio (zebra fish)
Method: OECD Test Guideline 203
Unpublished reports

hydroxyaluminium distearate : LC50 : > 100 mg/l - Fish
Published data

LC50 - 96 h : 8.6 mg/l - Oncorhynchus mykiss (rainbow trout)
By analogy
Published data

LC50 - 96 h : 12 mg/l - Fish
By analogy
Published data

Acute toxicity to daphnia and other aquatic invertebrates.
glass, oxide, chemicals : EC50 - 72 h : > 1,000 mg/l - Daphnia magna (Water flea)
Method: OECD Test Guideline 202
Unpublished reports

red phosphorus : EC50 - 48 h : 10.5 mg/l - Daphnia magna (Water flea)
Method: OECD Test Guideline 202
Unpublished reports

hydroxyaluminium distearate : EC50 - 48 h : 1.5 mg/l - Daphnia dubia
By analogy
Published data

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- Toxicity to aquatic plants
glass, oxide, chemicals : EC50 - 72 h : > 1,000 mg/l - Pseudokirchneriella subcapitata
Method: OECD Test Guideline 201
Growth rate
Unpublished reports
- NOEC - 72 h : > 1,000 mg/l - Pseudokirchneriella subcapitata
Method: OECD Test Guideline 201
Growth rate
Unpublished reports
- red phosphorus : EC50 - 72 h : 18.3 mg/l - Desmodesmus subspicatus (green algae)
Method: OECD Test Guideline 201
Growth rate
Unpublished reports
- Toxicity to microorganisms
red phosphorus : EC50 - 3 h : > 1,000 mg/l - activated sludge
Respiration inhibition
Method: OECD Test Guideline 209
Unpublished reports
- Chronic Toxicity to aquatic plants
red phosphorus : EC10: 6.6 mg/l - 72 h - Desmodesmus subspicatus (green algae)
Method: OECD Test Guideline 201
Growth rate
Unpublished reports

Terrestrial Compartment

- Toxicity to soil dwelling organisms
red phosphorus : NOEC: 125 mg/kg - 56 Days - Eisenia fetida (earthworms)
Method: OECD Test Guideline 222
Unpublished reports
- NOEC: >= 1,000 mg/kg - 28 Days - soil micro-organisms
Method: OECD Test Guideline 216
Unpublished reports

Ecotoxicity assessment

- Acute aquatic toxicity : The product does not have any known adverse effects on the aquatic organisms tested
According to the classification criteria for mixtures.

12.2 Persistence and degradability

Biodegradability

- Biodegradability : Not biodegradable.
internal evaluation

Stability

- Stability in water
glass, oxide, chemicals : Not applicable insoluble product
- red phosphorus : Hydrolyses slowly on contact with water.

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12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water : Not applicable preparation
 Bioconcentration factor (BCF) : No information available.

12.4 Mobility in soil

Known distribution to environmental compartments : Ultimate destination of the product : Soil
 Ultimate destination of the product : Sediment

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

Environment assessment
 glass, oxide, chemicals : Not classified as Dangerous for the Environment
 red phosphorus : Harmful to aquatic life with long lasting effects.
 Phenol, formaldehyde polymer : Not classified due to lack of data.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

Advice on Disposal : Dispose of in accordance with local regulations.

Advice on cleaning and disposal of packaging

Other data : Dispose of in accordance with local regulations.

SECTION 14: Transport information

CN_DG

Not Regulated

ADR

Not Regulated

RID

Not Regulated

IMDG

Not Regulated

IATA

Not Regulated

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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 20576~GB 20602)
- 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

SECTION 16: Other information

Full text of H-Statements

| | |
|------|--|
| H228 | Flammable solid. |
| H313 | May be harmful in contact with skin. |
| H317 | May cause an allergic skin reaction. |
| H401 | Toxic to aquatic life. |
| H402 | Harmful to aquatic life. |
| H412 | Harmful to aquatic life with long lasting effects. |

Full text of P-Statements referred to under section 2.

| | |
|-------------|---|
| P261 | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P280 | Wear protective gloves. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P321 | Specific treatment (see supplemental first aid instructions on this label). |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/ attention. |
| P363 | Wash contaminated clothing before reuse. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

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

Exposure controls/personal protection

| | |
|-----|-------------------------------|
| TWA | 8-hour, time-weighted average |
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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 an 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.