

CAS: Your Launch Pad for Scientific Research

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Account Representative
Fall 2011 ACS National Meeting



Launch pad

1. A platform from which rockets, missiles or satellites are launched
2. A situation you can use in order to go forward to something better or more important



CAS, a stable foundation

“CAS, a part of the American Chemical Society, has for decades been the main source of abstracted literature material for chemists. In its assimilation process it had evolved into a database of virtually every single compound that has ever been detected, isolated, or synthesized.”

David Bradley
“Chemical Databases Cover All Possibilities”
Scientific Computing World

Research, the final frontier

“Do not go where the path may lead, go instead where there is no path and leave a trail.”

Ralph Waldo Emerson,
quoted in *In the Shadow of the Moon*,
Documentary about U.S. manned missions to the Moon

What do we know?

Where can we learn more?

Who has been or is trying to get here?

CAS provides the world's best chemistry research tools



Customers rely on CAS:

- Throughout their enterprise, not just in the areas of synthetic chemistry
- To access the same collection of chemistry and related scientific information trusted by the USPTO and other major patent offices around the globe
- For trusted, expert support

“To go places and do things that have never been done before – that’s what living is all about.”

Michael Collins, flew on Gemini 10 and Apollo 11

Only CAS provides access to the CAS REGISTRYSM, the gold standard for chemical substances

- >61.4 million* small organic and inorganic molecules (including 2.1 million organometallic compounds)
- >63 million* sequences
- Novel molecules and sequences identified, validated and added daily



** 1 August 2011*

CAS REGISTRY substances are enhanced with numeric properties, spectra and data tags

CAS offers:

- **>3 billion physical and biological properties for >46 million substances**
 - Includes 5.1 million experimental properties for 2.8 million key substances
- **>44 million ^{13}C -NMR and ^1H -NMR spectra**
 - Includes 721,000 experimental spectra for 500,000 substances
- **10.4 million data tags providing precision pointers to additional property information**



CAS offers integrated access to vast information resources

References

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293 References 0 Selected
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Answers per Page [20] 1 2 3 4 5 6 ... 15

- 1. **Space heritage: the Apollo heat shield; atmospheric reentry imprint on materials' surface**
 By Szczepanowska, Hanna; Mathia, Thomas G.
 From Materials Research Society Symposium Proceedings (2011), Volume Date 2010, 1319(Materials Issues in Art and Archaeology IX), No pp. given. Language: English, Database: CAPLUS
 The **heat** shield is part of a **thermal protective** system (TPS) essential in shielding the cargo of a **spacecraft** during reentry to the earth's atm. The ablated surface of the **heat** shield is a testimony to the harsh reentry environment, evidenced in melting and charring among other phenomena that occur during reentry at velocity of 9-11 km/s. The aim of this study was to extrapolate information about atm. reentry from the surface of the ablated material. A sample of the **heat** shield from the test **vehicle** of the Apollo Program, AS-202, was the subject of the anal. For the preliminary studies, se...
Substances Reactions Citings Full Text Link Comments Tags
- 2. **Multi-scale simulations of in-depth pyrolysis of charring ablative thermal protection material**
 By Cheng, Gary C.; Venkatachari, Balaji Shankar; Cozmuta, Ioana
 From Computers & Fluids (2011), 45(1), 191-196. Language: English, Database: CAPLUS
 Charring ablative **thermal protection** systems have been commonly used to **protect** the payload of a hypersonic or **space** exploration **vehicle** from exposure to high **heat** loads. The phys. phenomena assocd. with the pyrolysis of the charring ablative material are very complex. The existing surface ablation models were built upon various assumptions, which introduce large uncertainties in the engineering design process and disable the direct assessment of uncertainties at engineering level. The current study proposes a multi-scale numerical model to simulate the in-depth pyrolysis process of a charr...
Substances Reactions Citings Full Text Link Comments Tags
- 3. **A contribution for the simulation of VUV-IR radiation transfer in CO2-N2 entry flows using a line-by-line model**
 By Lino da Silva, M.
 From European Space Agency, [Special Publication] SP (2011), SP-689(Radiation of High Temperature Gases in Atmospheric Entry), lino1/1-lino1/6. Language: English, Database: CAPLUS
 Departing from the proposed Test-Case 3 for the simulation of Martian atm. entry radiative transfer, we present several simulations carried out using a full line-by-line spectral simulation, ranging from VUV to IR. Namely, the radiation of CO2 IR transitions are treated using a two-temp. (T,Tu) line-by-line model. Several calcs. are presented which showcase the ability to solve the uncoupled radiative transfer problem (**Heat** transfer towards a **spacecraft thermal protections**) in a timely fashion, using a 8-core, 32GB RAM Linux Debian machine. In these calcs., different criteria are evaluate...
Substances Reactions Citings Full Text Link Comments Tags
- 4. **Carbon-carbon thermal shield for spacecraft engine**
 By Rawal, Suraj P.; Gasparrini, Timothy D.
 From SAMPE Conference Proceedings (2009), 54, rawal1/1-rawal1/11. Language: English, Database: CAPLUS
 Generally, titanium alloy or steel based **thermal** shields are used for the main engine of the **spacecraft** propulsion system. The **thermal** shield should be lightwt. and provide capability to sustain the engine-plume temps., and **protect** the thermally-sensitive **spacecraft** surfaces. For the Mars Global Surveyor (MGS) **spacecraft**, a carbon-carbon (C-C) **thermal** shield assembly was designed, fabricated, and successfully integrated onto the **spacecraft**. A building block approach was used to design, analyze and fabricate the **thermal** shield assembly for the MGS **spacecraft**. Using T300-1K fabric, two C-C s...
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Analysis Refine

Analyze by:

Company-Organization

Click bar to view only those references within the current answer set

NASA, USA	14
The Boeing Company, USA	6
USA	6
Clemson University, USA	5
German Aerospace Center (DLR), Germany	4
Lockheed Martin Corporation, USA	3
McDonnell Douglas Astronaut Co, USA	3
NASA Ames Research Center, USA	3
Politecnico di Torino, Italy	3
United States National Aeronautics and Space Administration, USA	3

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308 Substances 0 Selected Save Print Export

Select All Deselect All Sort by: CAS Registry Number Answers per Page [15] 1 2 3 4 5 6 ... 21 View: [Icons]

1. **Substance Detail**
863301-54-6

No Structure Diagram Available

Editor Note: A paraffinic hydrocarbon phase change material having a peak transition temperature of 175 °F

Unspecified

Thermasorb 175 (9CI)

[~1 References](#)

- Reactions
- Commercial Sources
- Regulatory Information
- Link

2. **Substance Detail**
863301-52-4

No Structure Diagram Available

Editor Note: A paraffinic hydrocarbon phase change material having a peak transition temperature of 111 °F

Unspecified

Thermasorb 111 (9CI)

[~1 References](#)

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- Regulatory Information
- Link

3. **Substance Detail**
863301-51-3

No Structure Diagram Available

Editor Note: A paraffinic hydrocarbon phase change material having a peak transition temperature of 122 °F

Unspecified

Thermasorb 122 (9CI)

[~1 References](#)

- Reactions
- Commercial Sources
- Regulatory Information
- Link

4. **Substance Detail**
848067-09-4

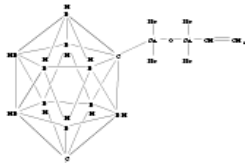
Component	Component Percent
Al	88
Si	12

Al . Si

Aluminum alloy, base, Al,Si (Metco 52C-NS)

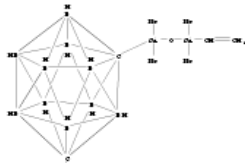
5. **Substance Detail**
704909-13-7

210707-88-3
C₁₄ H₄₀ B₁₀ O₂ Si₄



6. **Substance Detail**
704909-12-6

210707-88-3
C₁₄ H₄₀ B₁₀ O₂ Si₄



Analysis Refine

Analyze by: [Substance Role](#)

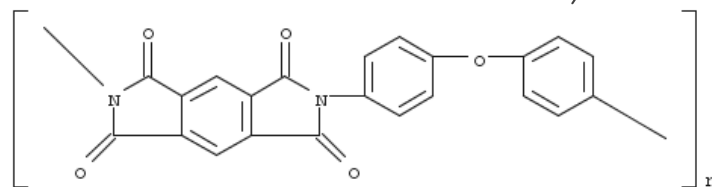
Click bar to view only those substances within the current answer set

- Uses
- Properties
- Process
- Preparation
- Reactant or Reagent
- Analytical Study
- Biological Study
- Formation, Nonpreparative
- Miscellaneous
- Occurrence

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In chemistry, if it's important, CAS has it

Spectra Properties	Value
IR Absorption Spectrum	See spectrum
IR Absorption Spectrum	See spectrum
IR Absorption Spectrum	See spectrum



CAS Registry Number: 25036-53-7
$(C_{22} H_{10} N_2 O_5)_n$
Poly[(5,7-dihydro-1,3,5,7-tetraoxobenzo[1,2-c:4,5-c']dipyrrole-2,6(1H,3H)-diyl)-1,4-phenyleneoxy-1,4-phenylene]
Poly[(5,7-dihydro-1,3,5,7-tetraoxobenzo[1,2-c:4,5-c']dipyrrole-2,6(1H,3H)-diyl)-p-phenyleneoxy-p-phenylene] (BCI); Benzo[1,2-c:4,5-c']dipyrrole, deriv., polymer; 1,2,4,5-Benzenetetracarboxylic acid-4,4'-oxydianiline polymer, SRU; 1,2,4,5-Benzenetetracarboxylic dianhydride-4,4'-diaminodiphenyl ether copolymer, SRU; 1,2,4,5-Benzenetetracarboxylic dianhydride-p,p'-diaminodiphenyl ether polymer, SRU; 2,5-dicarbomethoxyterephthalic acid-4,4'-oxydianiline copolymer,

~9,212 References
Reactions
Commercial Sources
Regulatory Information
Link

Structure-related Properties	Value
Crystal Structure	See full text
Particle Size	See full text
Thermal Properties	Value
Glass Transition Temperature	385 °C
Glass Transition Temperature	360 °C
Glass Transition Temperature	356 °C

CAS provides the world's best digital research environment for chemical information

ACS Mission

To advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people.

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To provide the world's best digital research environment to search, retrieve, analyze and link chemical information.





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