



# 신개념 기술전자도서관 Knovel(노벨) 사용매뉴얼

실제 사용방법 예시

Aug., 2018

Engineering Team - Key Lee (이기혁 차장)



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- My Knovel - 관리페이지
- Browse - 서적검색
- Knovel Tools - 기타 Knovel 툴



# Knovel®(노벨)

1. 2000년 미국의 엔지니어에 의해 개발된 공학용 툴
2. 검색어 입력만으로 엔지니어 및 연구자에게 필요한 서적, 표, 그래프, 방정식을 제공하는 엘스비어의 웹클라우드기반 차세대 엔지니어링 데이터베이스
3. 실제 현업에서 필요한 핸드북, 매뉴얼, 가이드라인 및 기술서적을 기반으로 엔지니어에게 필요한 데이터를 제공
4. Elsevier의 서적 뿐만이 아닌 다른 140여 곳의 학회와 출판사에서 제공받은 인증된 공학·과학기초 자료를 제공
5. 전체 9,000 권 이상의 면밀하고 엄격한 선정과정을 거친 자료를 제공



# Knovel® 자료출처 (일부예시)



# Knovel® 세계 유명기업/기관 구독현황(일부 예시)



# Knovel 주제분야 목록

| No. | 주제분야   | No. | 주제분야  |
|-----|--|-----|---|
| 1   | Adhesives, Coatings, Sealants & Inks             | 22  | Mining Engineering & Extractive Metallurgy                    |
| 2   | Aerospace & Radar Technology                     | 23  | Nanotechnology  |
| 3   | Biochemistry, Biology & Biotechnology            | 24  | Nondestructive Testing & Evaluation                           |
| 4   | Ceramics & Ceramic Engineering                   | 25  | Oil & Gas Engineering   |
| 5   | Chemistry & Chemical Engineering                 | 26  | Optics & Photonics  |
| 6   | Civil Engineering & Construction Materials       | 27  | Pharmaceuticals, Cosmetics & Toiletries                       |
| 7   | Composites                                       | 28  | Plastics & Rubber   |
| 8   | Computer Hardware Engineering                    | 29  | Process Design, Control & Automation                          |
| 9   | Earth Sciences                                   | 30  | Safety & Industrial Hygiene                                   |
| 10  | Electrical & Power Engineering                   | 31  | Software Engineering  |
| 11  | Electronics & Semiconductors                     | 32  | Sustainable Energy & Development                              |
| 12  | Engineering Management & Leadership              | 33  | Textiles  |
| 13  | Environment & Environmental Engineering          | 34  | Transportation Engineering                                    |
| 14  | Fire Protection Engineering & Emergency Response | 35  | Welding Engineering & Materials Joining                       |
| 15  | Food Science                                     | 36  | Promotion Title   |
| 16  | General Engineering & Project Administration     | P1  | AICHE/CCPS - Center for Chemical Process Safety               |
| 17  | Industrial Engineering & Operations Management   | P2  | ASM International Materials Collection                        |
| 18  | Manufacturing Engineering                        | P3  | ASME Boiler and Pressure Vessel Code 2001-2013, Section II    |
| 19  | Marine Engineering & Naval Architecture          | P4  | DIPPR Project 801   |
| 20  | Mechanics & Mechanical Engineering               | P5  | Knovel Polymer Matrix Composites Database – New!!             |
| 21  | Metals & Metallurgy                              | P6  | Chemical Resistance Database: Plastics and Elastomers – New!! |





# Knovel Home Page

# Knovel Home Page - 기본화면



Knovel

Support Center

Welcome Key Lee

SEARCH KNOVEL

PROPERTY SEARCH

calculating flow rate

My Knovel

Recently Viewed

- International Encyclopedia of Ergonomics and Human F...
- Robotics, Automation, and Control in Industrial and Ser...
- Innovative Production Machines and Systems - Fifth I\*P...

Recent Searches

- co-bot
- cobot
- cooperat\* robot

Go to My Knovel

Knovel at a Glance

Instant access to thousands of materials and millions of properties.

Plastics

Chemicals

Metals

Composites

Alloys

Search Properties

Keep Your Own Notes

Save personal comments, explanations, and reminders in Knovel documents.

|  | 150 | 300  | 400  | 600   |
|--|-----|------|------|-------|
|  |     | 51.1 | 68.1 | 102.1 |

01:22 PM Jan

Compare to January field data

Cancel Add Note

Feedback

1. <https://app.knovel.com>에 접속하면 상기 시작페이지가 나타납니다.
2. 중앙에 있는 검색창에 keyword를 입력한 후 돋보기 마크를 클릭하거나, 엔터 키를 이용하여 검색을 수행할 수 있습니다.
3. 다음 장에서 기본화면 내 기능에 대해서 설명하겠습니다.



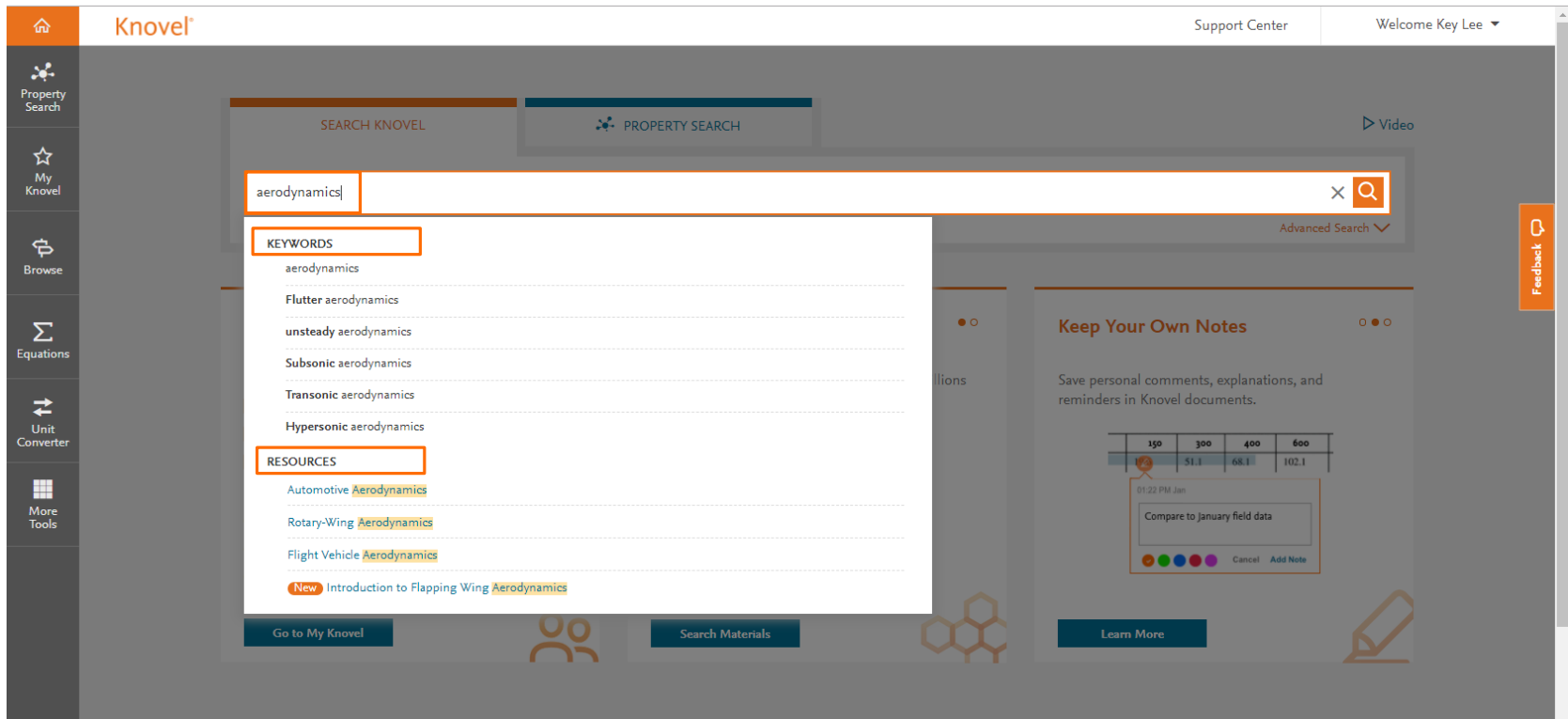
# Knovel Home Page - 기본화면



The screenshot shows the Knovel Home Page interface. On the left is a vertical navigation menu with icons for Property Search, My Knovel, Browse, Equations, Unit Converter, and More Tools. The main content area features a search bar with the text 'calculating flow rate', a 'PROPERTY SEARCH' button, and three information panels: 'My Knovel' (Recently Viewed and Recent Searches), 'Knovel at a Glance' (Instant access to thousands of materials and millions of properties, with a central diagram of material categories like Plastics, Metals, Alloys, Composites, and Chemicals), and 'Keep Your Own Notes' (Save personal comments, explanations, and reminders in Knovel documents, with a table and a note editor). A 'Feedback' button is on the right, and an 'Explore this page' button is at the bottom right.

1. **Home:** 홈페이지 시작화면
2. **Property Search:** 재료물성정보 제공(표, 그래프)
3. **My Knovel:** 자주 사용하는 콘텐츠 관리
4. **Browse:** Knovel 서적컨텐츠를 주제분야 별로 확인
5. **Equations:** 기술공식 활용가능
6. **Unit Converter:** 공학단위변환기
7. **More Tools:** 모바일용 My Knovel ToGo 등 다운가능
8. **Search:** 키워드, 서적제목 및 저자명으로 자료검색
9. **Property Search:** 재료물성정보 제공(표, 그래프)
10. **Support Center:** 고객센터
11. **Welcome:** 사용자정보 업데이트, 암호변경 및 로그아웃
12. **Information Panels:** 최근검색활동, 추가컨텐츠, 주요공지사항 제공
13. **Explore this page:** 업데이트 된 기능 공지

# Knovel Search - 기본검색



1. 검색창에 “Aerodynamics”를 입력해보겠습니다.
2. “Aerodynamics”를 입력하자마자 관련된 용어가 “KEYWORDS”로 제시됩니다.
3. 아래 “RESOURCES”에서는 검색하고자하는 keyword가 제목에 포함된 기술서적을 확인할 수 있으며, 클릭하면 해당 서적으로 넘어갑니다.

# Knovel Search - 기본검색



The screenshot shows the Knovel search interface. At the top, there is a navigation bar with 'Knovel' and 'Support Center' links. Below the navigation bar, there are two main search tabs: 'SEARCH KNOVEL' and 'PROPERTY SEARCH'. The 'SEARCH KNOVEL' tab is active, and a search bar contains the text 'aerodynamics'. A dropdown menu is open below the search bar, showing a list of keywords and resources. The keywords listed are: aerodynamics, Flutter aerodynamics, unsteady aerodynamics, Subsonic aerodynamics, Transonic aerodynamics, and Hypersonic aerodynamics. The resources listed are: Automotive Aerodynamics, Rotary-Wing Aerodynamics, Flight Vehicle Aerodynamics, and a new entry: Introduction to Flapping Wing Aerodynamics. The interface also features a sidebar with navigation options like 'Property Search', 'My Knovel', 'Browse', 'Equations', 'Unit Converter', and 'More Tools'. A 'Feedback' button is visible on the right side.

1. **Search:** 키워드, 구문, Boolean('title:', 'author:') 검색
2. **Keywords:** 엔지니어링 키워드 자동추천
3. **Resources:** 검색된 문헌 및 기술서적 제시

# Basic Search - 검색 시 유의사항

## 1. Boolean 방식의 연산자를 검색에 사용

- **OR** 연산자: 주제어로 지정한 조건이 **한개라도** 포함된 결과를 모두 검색  
예 : rapid transit OR light rail OR subways seatbelts OR seat belts
- **AND** 연산자: 주제어로 지정된 조건이 **모두 다** 포함된 결과만을 검색  
예 : Prosthetics AND biocontrol
- **NOT** 연산자: 검색 조건 중에 **하나를 제거**  
예: mines OR mining NOT "data mining"

## 2. 별표(\*)는 같은 글자로 시작하는 단어를 검색

- **별표(\*)**는 같은 글자로 시작하는 모든 단어를 별표가 사용되는 지점부터 검색하는 명령어임  
예 : 'Comput\*'로 검색시 computer, computerized, computation, computational 등을 검색

## 3. 오타자(Typo) 주의

- 검색어 자동수정 기능이 있으나, 광범위하고 다양한 공학분야에 모두 적용되지 못함  
예 : applied metal **foming** → applied metal **forming** , **aireless** tire → **airless** tire

## 4. 약어 및 간단 화학원소기호 검색

예 : CAP → 건설, 식품, 화학 등 다양한 분야에 쓰이는 용어로 가급적 Full Name으로 검색  
분자식 검색 시에는 N2O4 → N2O4로 검색 가능



# Knovel Search Result - 검색결과



Knovel

Support Center Welcome Key Lee

Home > Search for: aerodynamics

aerodynamics

Advanced Search

Share Search Results Save Search Query Video

Refine By Related Concept

- aerodynamic drag
- aeroelasticity
- aerodynamic forces
- transonic
- hypersonic
- flutter
- wings
- wind tunnel

[+] More

External Links

Compendex from Engineering Village

Sort by Relevancy

All (1800+) Books / Text (1800+) Graphs / Tables (17) Definitions (30+)

1 2 3 ... 37

Include out of subscription results

New [BOOK] **Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications** ☆ Save Result

By Marqués, Pascual; Da Ronch, Andrea (2017)

...This book presents emerging aerospace technologies in the rapidly growing field of unmanned aircraft engineering. Leading scientists, researchers and inventors describe the findings and innovations accomplished in current research... More

See Inside

[CHAPTER] **3.6 Aerodynamics** ☆ Save Result

From Principles of Sustainable Energy Systems (2nd Edition) (2014) > 3. Wind Energy

...3.6 **Aerodynamics** Examining the **aerodynamics** of WT blades helps explain why different WT configurations have such different performance coefficients,  $C_p$  [24,25]. Figure 3.8 shows a WT blade rotating (in the plane of... More

See more results from this title

[CHAPTER] **56.2.4 Aerodynamics** ☆ Save Result

From European Rotorcraft Forum 2014, Conference Programme & Proceedings, 2-5, September 2014, Southampton, UK (2014) > 56. Rotorcraft Pre-Design Activities at DLR - Results, Status and Outlook > 56.2 Pre-Design Software Toolbox

...**Aerodynamics** The overall flight performance prediction of helicopters using the flight mechanics code HOST (section 2.7) relies on **aerodynamic** performance maps for isolated components (fuselages, tail surfaces, wings). In the RIDE toolbox several modules of

1. 검색결과 **Book/Text** (서적/문헌) 이 1800건 이상, **Graphs/Tables**(그래프/표) 17건, **Definitions**(정의)가 30건 이상 검색되었습니다.
2. 왼쪽 '**Refine By Related Concept**'에서는 검색한 keyword를 보다 세분화 시킨 관련 검색어가 나옵니다.
3. 검색결과는 **Relevancy**(관련도)를 기준으로 나타냅니다. 관련도 외에도 **최신 발행일** 순으로도 정리할 수 있습니다.
4. 다음 장에서 검색결과 내 메뉴의 기능에 대해서 설명하겠습니다.

# Knovel Search Result - 검색결과



1. **검색어 창:** 검색한 키워드 표시
2. **Share Search Results:** 검색 결과 이메일 공유
3. **Save Search Query:** 해당 검색어 저장
4. **Video:** 튜토리얼 비디오
5. **Refine By:** Knovel 콘텐츠 중 관련 기술용어 제시
6. **Contents:** 콘텐츠 유형별로 결과를 필터링
  - All Resources Types · Titles/Text
  - Material Properties · Equations · Definitions
7. **Sort by:** 관련도 및 최신 순으로 결과 목록 정렬
8. **Include out of subscription results:** 미구독 주제분야 검색결과 포함
9. **See Inside:** 서적 목차, 표 또는 문헌자료 등 미리보기
10. **검색결과**
11. **정보출처:** 정보를 발췌한 기술서적의 목차로 이동
12. **More:** 토막정보를 확대하여 추가정보 제공

# Knovel Search Result - 검색결과



The screenshot shows the Knovel search interface. At the top, the search bar contains 'aerodynamic'. Below the search bar, there are navigation options: 'Share Search Results', 'Save Search Query', and 'Video'. A filter bar is visible with categories: 'All (1800+)', 'Books / Text (1800+)', 'Graphs / Tables (17)', and 'Definitions (30+)'. The 'Books / Text' category is highlighted with an orange box. Below the filter bar, there are buttons for 'Books', 'Chapters', 'Conference Proceedings', 'Engineering Cases', and 'Regulatory'. The search results are sorted by 'Relevancy' and show three results. The first result is '[BOOK] Flight Theory and Aerodynamics - A Practical Guide for Operational Safety (3rd Edition)' by Dole, Charles E.; Lewis, James E.; Badick, Joseph R.; Johnson, Brian A.... (2017). The second result is '[BOOK] Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications' by Marqués, Pascual; Da Ronch, Andrea (2017). The third result is '[BOOK] Automotive Aerodynamics' by Katz, Joseph (2016). On the left side, there is a 'Refine By Related Concept' section with a list of terms: aeroelasticity, transonic, hypersonic, flutter, wings, wind tunnel, airfoil, and subsonic. There is also an 'External Links' section with a link to 'Compendex from Engineering Village'.

5. 검색된 콘텐츠 종류 중 **Book/Text** (서적/문헌) 를 클릭해보겠습니다.
6. 클릭하면 '**Books**', '**Chapters**', '**Conference Proceedings**' 등이 콘텐츠 종류별로 분류되며, 원하시는 콘텐츠 종류로 정렬하여 볼 수 있습니다.

# Knovel Search Result - 검색결과



Knovel

Support Center Welcome Key Lee

Home > Search for: aerodynamics

aerodynamics

Advanced Search

Share Search Results Save Search Query Video

Refine By Related Concept

- aerodynamic drag
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- aerodynamic forces
- transonic
- hypersonic
- flutter
- wings
- wind tunnel

[+] More

External Links

Compendex from Engineering Village

All (1800+) Books / Text (1800+) Graphs / Tables (17) Definitions (30+)

Sort by Relevancy

1 2 3 ... 37

Include out of subscription results

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By Marqués, Pascual; Da Ronch, Andrea (2017)

...This book presents emerging aerospace technologies in the rapidly growing field of unmanned aircraft engineering. Leading scientists, researchers and inventors describe the findings and innovations accomplished in current research... More

See Inside

[CHAPTER] 3.6 Aerodynamics Save Result

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See more results from this title

[CHAPTER] 56.2.4 Aerodynamics Save Result

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...Aerodynamics The overall flight performance prediction of helicopters using the flight mechanics code HOST (section 2.7) relies on aerodynamic performance maps for isolated components (fuselages, tail surfaces, wings). In the RIDE toolbox several modules of

7. 검색결과 왼쪽에 제공되는 자료의 형태를 알 수 있습니다. 검색결과 좌측에 **[BOOK]** 표시는 책 제목에서 **'Aerodynamics'** 가 포함된 서적임을 나타내며, 서적 전체가 제공됨을 의미합니다.

8. 검색결과 중 **'Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications'** 를 클릭해보겠습니다.



# Knovel Resource - Book



The screenshot shows the Knovel website interface. At the top, there is a search bar and a navigation menu. The main content area features a book card for 'Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications'. Below the book card, there are sections for 'Try Our Mobile App', 'Additional Information', and a table of contents. The table of contents is highlighted with an orange border.

**Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications**

This book presents emerging aerospace technologies in the rapidly growing field of unmanned aircraft engineering. Leading scientists, researchers and inventors describe the findings and innovations accomplished in current research programs and industry applications throughout the world. Topics included cover a wide range of new aircraft concepts and their applications for real world fixed-wing (airplanes), rotary wing (helicopter) and quad-rotor aircraft.

**Try Our Mobile App**

Download our mobile app to search and read engineering technical references anywhere, even when you're offline.

**Additional Information**

|                       |                                    |
|-----------------------|------------------------------------|
| Author(s) / Editor(s) | Marqués, Pascual; Da Ronch, Andrea |
| Publisher             | John Wiley & Sons                  |
| Copyright Date        | 2017                               |
| ISBN                  | 978-1-118-92868-4                  |
| Electronic ISBN       | 978-1-5231-1560-0                  |
| Knovel Release Date   | 2018-04-15                         |
| Knovel Subject        | Aerospace & Radar                  |

**Table of Contents**

- Front Matter
- Prefaces
- Table of Contents
- 1. Advanced UAV Aerodynamics, Flight Stability and Control: An Introduction
- 2. Aerodynamics of UAV Configurations
- Part I. Novel Concepts in Unmanned Aircraft Aerodynamics
- 1.1 Fixed-Wing (Airplanes)
- 3. Aerodynamic Performance Analysis of Three Different Unmanned Re-Entry Vehicles
- 4. Nonlinear Reduced-Order Aeroservoelastic Analysis of Very Flexible Aircraft
- 5. Unmanned Aircraft Wind Tunnel Testing
- 6. Chord-Dominated Ground-Effect Aerodynamics of Fixed-Wing UAVs
- 1.2 Rotary-Wing (Helicopter)
- 7. Dynamics Modelling and System Identification of Small Unmanned Helicopters
- 8. Aerodynamic Derivative Calculation Using Radial Basis Function Neural Networks

1. 검색결과 중 'Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications' 를 클릭하면 다음과 같은 화면이 나타납니다.
2. 해당 화면에서는 서적의 제목, 설명, 서적정보, 목차 등이 제공됩니다.
3. 다음 장에서 서적 클릭 후 메뉴의 기능에 대해서 설명하겠습니다.

# Knovel Resource - Book



Knovel

Search Knovel

Support Center

Welcome Key Lee

Home > Search for...erodynamic > Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications

## Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications

This book presents emerging aerospace technologies in the rapidly growing field of unmanned aircraft engineering. Leading scientists, researchers and inventors describe the findings and innovations accomplished in current research programs and industry applications throughout the world. Topics included cover a wide range of new aircraft concepts and their applications for real world fixed-wing (airplanes), rotary wing (helicopter) and quad-rotor aircraft.

View

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Search Within

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**Additional Information**

|                       |                                    |
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| Knovel Release Date   | 2018-04-15                         |
| Knovel Subject        | Aerospace & Radar                  |

**NEW!**  
Make your own Notes in this book!

8

- > Front Matter
- > Prefaces
- Table of Contents
- > 1. Advanced UAV Aerodynamics, Flight Stability and Control: An Introduction
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- 1.2 Rotary-Wing (Helicopter)
- > 7. Dynamics Modelling and System Identification of Small Unmanned Helicopters
- > 8. Aerodynamic Derivative Calculation Using Radial Basis Function Neural Networks

1. **Title:** 서적 표지, 제목, 간단설명 표시
2. **Save to My Knovel:** 개인계정에 저장
3. **Citations:** 서지관리프로그램으로 전송
4. **Save to Mobile:** 모바일 기기로 저장 (My Knovel ToGo)
5. **Share:** 검색 결과 이메일 공유
6. **Resume Reading:** 이전에 읽었던 부분으로 돌아감
7. **Additional Information:** 저자명, 출판사명, 출간일, ISBN 정보 등을 제공
8. **Table of Contents:** 목차, 해당 Chapter를 클릭하면 원문확인 가능

# Knovel Resource - Book



Knovel

Search Knovel

Support Center

Welcome Key Lee

Home > Search for...erodynamic > Advanced UAV Aerodynamics, Flight Stability an...trol - Novel Concepts, Theory and Applications

## Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications

This book presents emerging aerospace technologies in the rapidly growing field of unmanned aircraft engineering. Leading scientists, researchers and inventors describe the findings and innovations accomplished in current research programs and industry applications throughout the world. Topics included cover a wide range of new **aircraft concepts** and their applications for real world fixed-wing (airplanes), rotary wing (helicopter) and quad-rotor aircraft.

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Make your own Notes in this book!

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    - > 3. Aerodynamic Performance Analysis of Three Different Unmanned Re-Entry Vehicles**
    - > 4. Nonlinear Reduced-Order Aeroservoelastic Analysis of Very Flexible Aircraft
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  - 1.2 Rotary-Wing (Helicopter)
    - > 7. Dynamics Modelling and System Identification of Small Unmanned Helicopters
    - > 8. Aerodynamic Derivative Calculation Using Radial Basis Function Neural Networks

**Additional Information**

|                       |                                    |
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4. 목차에서 원하는 **Chapter (장)**를 클릭하면 **서적원문**으로 들어갑니다.

5. 목차 중에서 **'3. Aerodynamic Performance Analysis of Three Different Unmanned Re-Entry Vehicles'** 를 클릭해보겠습니다.

# Knovel Resource - Book



The screenshot shows the Knovel website interface. At the top, there is a search bar and navigation links. The main content area displays a book chapter titled "3 Aerodynamic Performance Analysis of Three Different Unmanned Re-entry Vehicles" by Giuseppe Pezzella<sup>1</sup> and Antonio Viviani<sup>2</sup>. The chapter includes an introduction section. The left sidebar contains navigation options like "Property Search", "My Knowel", "Browse", "Equations", "Unit Converter", and "More Tools".

**3**

### Aerodynamic Performance Analysis of Three Different Unmanned Re-entry Vehicles

Giuseppe Pezzella<sup>1</sup> and Antonio Viviani<sup>2</sup>

<sup>1</sup> Italian Aerospace Research Centre, Capua, Italy  
<sup>2</sup> University of Campania "Luigi Vanvitelli", Aversa, Italy

#### 3.1 Introduction

This chapter deals with the aerodynamic performance analysis of three reusable and unmanned aerial vehicles conceived as flying laboratories to perform experimental flights in low Earth orbit (LEO). Each vehicle concept is an orbital re-entry vehicle (ORV), with re-entry energy of the order of 25 MJ/kg. They are flying test beds (FTBs) that will re-enter the Earth's atmosphere, thus allowing tests of critical re-entry technologies to be performed. The primary objective is to test in real flight conditions various thermal protection systems (TPSs) and hot structures that are potential candidates for next-generation re-entry vehicles. The secondary objective is to provide system-design tests of such re-entry vehicles, to address controlled gliding re-entry and to validate know-how related to in-flight measurement techniques.

Besides these objectives, they will also gather the aerothermal data needed to improve wind tunnel test facilities (including plasma wind tunnel facilities) and computational fluid dynamics (CFD) predictions and transpose them to flight. In particular, the vehicle will provide aerodynamic and aerothermodynamic flight data to correlate with ground testing results, such the 'Scirocco' plasma wind tunnel at CIRA<sup>1</sup>), thus providing new insights into the complex aerothermodynamic phenomena and improving prediction methodologies and their extrapolation to flight capabilities.

Based on experience in experimental vehicles, a progressive flight demonstration

6. 목차 중에서 '3. Aerodynamic Performance Analysis of Three Different Unmanned Re-Entry Vehicles' 를 클릭 후 나타난 서적원문입니다.
7. 해당 서적원문은 직접 컴퓨터에서 활용 가능하며, PDF 형태로 내려받기 하거나, 출력할 수 있습니다.
8. 다음 장에서 서적원문 화면에서 메뉴의 기능에 대해서 설명하겠습니다.

# Knovel Resource - Book



The screenshot shows the Knovel website interface. At the top, there is a search bar and navigation links. The main content area displays a document titled "Aerodynamic Performance Analysis of Three Different Unmanned Re-entry Vehicles" by Giuseppe Pezzella<sup>1</sup> and Antonio Viviani<sup>2</sup>. The document is divided into sections, with "3.1 Introduction" being the current view. The interface includes a left sidebar with navigation options like "Property Search", "My Knowel", "Browse", "Equations", "Unit Converter", and "More Tools". The top navigation bar contains various icons for document management and sharing. Numbered callouts (1-16) are placed over the interface to highlight specific features: 1. Home icon, 2. Search bar, 3. Content icon, 4. Save icon, 5. Share icon, 6. Save to Mobile icon, 7. Download icon, 8. Print icon, 9. Citations icon, 10. Zoom in/out icons, 11. Sticky Header icon, 12. Screen Reader icon, 13. Add Note icon, 14. View Notes icon, 15. Page navigation (Page 2 of 94), 16. Shortcuts icon.

1. **사용자 이동경로:** 검색 도구로 사용
2. **확장 모드:** 확장된 보기 화면으로 변환됩니다
3. **Content:** 해당 기술서적 원문 목차를 표시
4. **Save:** My Knowel에 저장
5. **Share:** 이메일로 현재 보고있는 기술원문 공유
6. **Save to Mobile:** 모바일 기기로 저장(My Knowel ToGo)
7. **Download:** 현재 보고 있는 원문을 PDF 파일로 내려받기
8. **Print:** 현재 보고 있는 원문을 인쇄
9. **Citation:** Bibtex, EndNote, Mendeley, ProCite, RefMan, RefWorks 및 Zotero와 같은 다양한 형식의 인용 프로그램으로 내보내기 가능
10. **확대/축소**

# Knovel Resource - Book



The screenshot displays the Knovel website interface. At the top, there is a search bar and navigation links. The main content area shows a book page titled "Aerodynamic Performance Analysis of Three Different Unmanned Re-entry Vehicles" by Giuseppe Pezzella<sup>1</sup> and Antonio Viviani<sup>2</sup>. The page includes an introduction section. Numbered callouts (1-16) point to various UI elements: 1. Home icon, 2. Property Search, 3. Content icon, 4. Save icon, 5. Share icon, 6. Save to Mobile icon, 7. Download icon, 8. Print icon, 9. Citations icon, 10. Sticky Header icon, 11. Screen Reader icon, 12. Add Note icon, 13. View Notes icon, 14. Search within icon, 15. Page navigation arrows, 16. Shortcuts icon.

11. **Sticky Header**: 메뉴 자동숨김 해제

12. **Screen Reader**: 원문을 PDF 보기형식으로 전환

13. **Add Note**: 메모 추가 또는 텍스트 하이라이트 표시

14. **Search**: 현재 검색어를 지우고 새용어를 검색

15. **이전 / 다음 페이지**

16. **Short Cut**: Knovel 원문보기에서 지원되는 단축 키 표시

# Knovel Resource - Chapter



The screenshot shows the Knovel search results page for the query 'aerodynamics'. The page features a search bar at the top with the query 'aerodynamics' and a search button. Below the search bar, there are options to 'Share Search Results', 'Save Search Query', and 'Video'. The results are categorized by type: 'All (1800+)', 'Books / Text (1800+)', 'Graphs / Tables (17)', and 'Definitions (30+)'. The results are sorted by 'Relevancy'. The first result is a book titled '[BOOK] Advanced UAV Aerodynamics, Flight Stability and Control - Novel Concepts, Theory and Applications' by Marqués, Pascual; Da Ronch, Andrea (2017). The second result is a chapter titled '[CHAPTER] 3.6 Aerodynamics' from 'Principles of Sustainable Energy Systems (2nd Edition) (2014)'. This chapter result is highlighted with a red box. The third result is another chapter titled '[CHAPTER] 56.2.4 Aerodynamics' from 'European Rotorcraft Forum 2014, Conference Programme & Proceedings, 2-5, September 2014, Southampton, UK (2014)'. The page also includes a sidebar with navigation options like 'Property Search', 'My Knovel', 'Browse', 'Equations', 'Unit Converter', and 'More Tools'. An 'External Links' section at the bottom left of the main content area points to 'Compendex from Engineering Village'. A 'Feedback' button is located on the right side of the page.

1. 이번에는 검색결과에서 직접 원문을 확인하는 방법을 알려드리겠습니다. 검색결과 좌측에 **[Chapter]** 표시는 서적원문 내용에서 'Aerodynamics'가 포함된 서적입니다.
2. 검색결과 중 'Principles of Sustainable Energy Systems (2nd Edition) (2014)'에서 검색된 '3.6 Aerodynamics'를 클릭해보겠습니다.



# Knovel Resource - Chapter



Knovel

Search Knovel

Support Center

Welcome Key Lee

Home > Search for: aerodynamic > Principles of Sustainable Energy Systems (2nd Edition) > 3.6 Aerodynamics

Content Save Share Save to Mobile Download Print Citations Sticky Header Screen Reader Add Note View Notes aerodynamic

### 3.6 Aerodynamics

Examining the aerodynamics of WT blades helps explain why different WT configurations have such different performance coefficients,  $C_p$  [24,25]. Figure 3.8 shows a WT blade rotating (in the plane of the paper) in a clockwise direction. The atmospheric wind,  $U_{atm}$  is blowing toward the blade (i.e., into the plane of the paper). A section view of the blade is then taken near the tip of the blade looking in toward the root of the blade (Figure 3.8). The cross-sectional view of the blade airfoil is shown in the right-hand side of the figure. The two airflows acting on the blade are the incoming wind speed,  $U_{in}$ , which is perpendicular to the plane of the rotating blades, and the rotational wind speed,  $U_{rot} = \Omega R$ , created by the turbine blade rotating at an angular speed,  $\Omega$ , at the radius of the cross section,  $R$ . Note that the side of the airfoil facing the wind (designated the front side) is relatively flat compared to the curved rear side of the airfoil. The leading edge of the airfoil hits the airflow arising from the blade rotation first causing the airflow to separate into two streams over the sides of the airfoil. Finally, the trailing edge is where the airflow over the two sides of the airfoil is rejoined.

Wind Energy 147

Rotor rotation Blade root Trailing edge

3. 검색결과 중 '**Principles of Sustainable Energy Systems (2nd Edition) (2014)**'에서 검색된 '**3.6 Aerodynamics**'를 클릭하면 도서정보가 아닌 원문이 곧장 다음과 같은 화면으로 나타납니다.
4. 사용방법과 메뉴는 '**Knovel Resource –Book**'에서 설명한 방법과 동일합니다.
5. 키워드 검색으로 원문에 바로 접속한 경우, 검색된 단어는 원문 전체에서 하이라이트되어 표시되며, 화면 우측 상단에 하이라이트된 키워드를 빠르게 이동하여 검색할 수 있습니다.



# Property Search

# Knovel Property Search - 물성검색



Knovel® Support Center Welcome Key Lee

SEARCH KNOVEL **PROPERTY SEARCH** Video

calculating flow rate

**My Knovel**

Recently Viewed

- International Encyclopedia of Ergonomics and Human F...
- Robotics, Automation, and Control in Industrial and Ser...
- Innovative Production Machines and Systems - Fifth I\*P...

Recent Searches

- co-bot
- cobot
- cooperat\* robot

Go to My Knovel

**Knovel at a Glance**

Instant access to thousands of materials and millions of properties.

Plastics Chemicals Composites Alloys Metals

Search Properties

**Keep Your Own Notes**

Save personal comments, explanations, and reminders in Knovel documents.

|  | 150 | 300  | 400  | 600   |
|--|-----|------|------|-------|
|  |     | 51.1 | 68.1 | 102.1 |

01:22 PM Jan

Compare to January field data

Cancel Add Note

Feedback

1. <https://app.knovel.com>에 접속한 후 왼쪽 첫번째 메뉴 또는 검색창 위의 두번째 탭에 표시된 'Property Search'를 클릭하면 다양한 재료의 물성치 정보를 검색할 수 있습니다.

# Knovel Property Search - 물성검색



Knovel offers following tools to help you find materials and properties data

**Material Property Search**  
Also known as Data Search, find material and property information from technical references.

**Knovel Data Analytics Beta**  
Visual and interactive search of NIST pure compounds database for chemicals and their properties.

[Open Material Property Search >](#)

[Open Chemical Materials Search >](#)

Plastics, Metals, Alloys, Composites, Chemicals

417, 628

Support Center | Welcome Key Lee

Video

Advanced Search

Feedback

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- Free for registered users
- Use anywhere online or offline
- Install on any iOS or Android phone or tablet

Learn More

2. 왼쪽 첫번째 메뉴를 클릭하면 나타나는 화면에서 **'Open Material Property Search'** 버튼을 클릭하면 물성정보 쿼리에 접근할 수 있습니다.

# Knovel Property Search - 물성검색



The screenshot displays the Knovel website's main interface. At the top, there is a navigation bar with 'Knovel' on the left, 'Support Center' in the middle, and 'Welcome Key Lee' on the right. Below this is a secondary navigation bar with 'SEARCH KNOVEL' and 'PROPERTY SEARCH' (highlighted with a red box). A sidebar on the left contains icons for 'Property Search', 'My Knovel', 'Browse', 'Equations', 'Unit Converter', and 'More Tools'. The main content area features a heading: 'Knovel offers following tools to help you find materials and properties data'. Below this, there are two primary tool cards. The first card, 'Material Property Search', is described as 'Also known as Data Search, find material and property information from technical references.' It includes a button 'Open Material Property Search' (highlighted with a red box) and a central diagram with five categories: Plastics, Chemicals, Composites, Alloys, and Metals. The second card, 'Knovel Data Analytics Beta', is described as 'Visual and interactive search of NIST pure compounds database for chemicals and their properties.' It includes a button 'Open Chemical Materials Search' and a bar chart showing a distribution of data points, with two specific values, 4.17 and 6.28, marked on the x-axis. A 'Feedback' button is located on the right side of the page.

3. 검색창 위의 두번째 탭을 클릭하면 나타나는 화면에서 'Open Material Property Search' 버튼을 클릭하면 물성정보 쿼리에 접근할 수 있습니다.

# Knovel Property Search - 물성검색



The screenshot shows the Knovel Property Search interface. At the top, there is a search bar with the text "Search Knovel" and a magnifying glass icon. To the right of the search bar are links for "Support Center" and "Welcome Key Lee". The main heading is "Material Property Search". Below the heading, there is a search input field labeled "MATERIAL OR SUBSTANCE NAME" containing the text "H2SO4". To the right of this field is a "Filter by Property Name" dropdown menu. Below the search field, there is a large area with the text "Drag and Drop Properties Here" and "Items dropped here will be added to your query. As you build your property search, your result count will appear here." On the right side, there is a list of property categories under the heading "Expand all":

- Chemical Properties
- Dimensional Properties
- Electrical Properties
- Electrochemical Properties
- Energy And Power
- Environmental Characteristics
- Fiber Properties
- Food And Nutrition
- Geography

4. 'Open Material Property Search' 를 클릭한 후에 나타나는 물성치 정보검색 창입니다.
5. 좌측 **Material or Substance Name** 창에 재료명을 입력하면 다양한 물성치 정보가 제공됩니다
6. 우측에 위치한 **Find a property** 창에서 찾고자하는 물성치를 직접 입력할 수 있습니다
7. **Property Search**의 보다 자세한 메뉴의 기능은 다음 장에서 언급하겠습니다.

# Knovel Property Search - 물성검색



- 1. 물질명:** 특정 물질명을 입력
- 2. URL 공유:** 이메일을 통해 검색을 공유
- 3. My Knovel에 저장:** 개인계정에 저장
- 4. Video:** 튜토리얼 비디오
- 5. 물성 필터링:** 재료물성을 입력 (예: 밀도)
- 6. 끌어놓기:** 원하는 물성을 끌어놓기해서 검색완료
- 7. 검색결과:** 클릭하면 검색된 내용 확인가능

## 재료명 입력방식

- 재료명 : titanium(티타늄), carbon(탄소), sulfuric acid (황산) 등
- CAS 등록 번호 : 71-43-2, 7440-38-3, 등
- 분자식 : c6h6, h2s04 등
- UNS 번호 : R56400, H40270 등
- ASTM 규격 : SA-182, SA-387 등

## 물성치

- 'AND', 'OR' 및 'NOT' 사용 최대 3 개의 속성 결합 가능
- Knovel은 숫자 값이나 숫자 범위가 입력 가능
- 메뉴창에서 측정 단위를 선택가능 (예, 온도 단위 F, C, K 등)

# Knovel Property Search - 물성검색



Knovel

Search Knovel

Support Center

Welcome Key Lee

Home > Material Property Search

Material Property Search

Share URL Save to My Knovel Video

MATERIAL OR SUBSTANCE NAME aluminum alloy

1646 Results

Filter by Property Name

Collapse all

- Acoustic Impedance
- Power Consumption
- Power Output
- Hazard-Related Properties
  - Flammability
    - National Fire Protection Association Flammability
    - National Fire Protection Association Health
    - National Fire Protection Association Reactivity
- Magnetic Properties
  - Frequency
- Material Composition
  - Ag Content

Drag and Drop Properties Here

Items dropped here will be added to your query.  
As you build your property search, your result count will appear here.

Feedback

7. 좌측 **Material or Substance Name** 창에 재료명을 **Aluminum Alloy**를 입력해 보겠습니다.

8. 하단에 재료명 **Aluminum Alloy**에 관하여 1,646건의 검색결과가 나왔습니다.

# Knovel Property Search - 물성검색



The screenshot shows the Knovel Material Property Search interface. The search bar contains 'aluminum alloy'. A filter for 'shear yield strength' is applied, showing 'exists' and '12 Results'. The right sidebar shows 'Mechanical Properties' with 'Shear Yield Strength' highlighted in a red box. A red arrow points from the sidebar to the filter box.

9. **Aluminum Alloy**의 항복전단강도가 알고싶으므로 **Filter by Property Name**창에 **Shear Yield Strength**를 치려고 합니다.
10. **자동완성기능**으로 쉽게 물성치 이름이 검색됩니다. 검색된 물성치를 좌측으로 **Drag** 하면 해당 물성치에 대해 재검색이 수행됩니다. 12개의 검색결과가 나왔습니다. 파란색 박스를 클릭합니다.



# Knovel Property Search - 물성검색



Knovel® Support Center Welcome Key Lee

Home > Material Property Search > Search for: aluminum alloy AND shear yield strength exists

material\_or\_substance\_name:"aluminum alloy" AND shear\_yield\_strength\_mf[\* TO \*]

Advanced Search

< Back to Property Search

External Links  
Compendex from Engineering Village

All (12) **Graphs / Tables (12)**

Sort by Relevancy < 1 > Include out of subscription results

[TABLE] Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties

From Metallic Materials Properties Development and Standardization (MMPDS-08)

table preview - 3 of 8 records View Full Table < >

| alloy type                     | alloy name                         | specification | form                | condition or temper | basis | thickness   | F <sub>tu</sub> ultimate tensile stress @ RT | F <sub>ty</sub> tensile yield stress @ RT | F <sub>cy</sub> compressive yield stress @ RT | F <sub>sur</sub> ultimate shear stress @ RT | F <sub>sy</sub> shear yield stress @ RT |
|--------------------------------|------------------------------------|---------------|---------------------|---------------------|-------|-------------|--|---|---|---|---|
| Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement | AMS 4254*...  | Sheet; 2/1 Laminate | 2/1 Layup           | S     | 0.032 (max) | 90(L); 48(LT)                                | 48(L); 33(LT)                             | 35(L); 33(LT)                                 | NA <sup>b</sup> ...                         | 16                                      |
| Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement | AMS 4254*...  | Sheet; 3/2 Laminate | 3/2 Layup           | S     | 0.053 (max) | 96(L); 44(LT)                                | 49(L); 30(LT)                             | 35(L); 30(LT)                                 | NA <sup>b</sup> ...                         | 15                                      |
| Aluminum Alloy                 | 2024-T3                            |               | Sheet;              |                     |       | 0.074       | 101(L);                                      | 49(L);                                    |   |   |   |

11. 검색결과 **Graphs/Tables**(그래프/표) 12건이 검색되었습니다.

12. 검색결과 중 **'Metallic Materials Properties Development and Standardization (MMPDS-08)'**에서 검색된 **'Miscellaneous Alloys and Hybrid Materials – Design Mechanical Properties'** 를 클릭해보겠습니다.

# Knovel Property Search - 물성검색



Knovel<sup>®</sup> Search Knovel Support Center Welcome Key Lee

Home > Material Search > Search...ists > Metal...S-08 > Miscellaneous Alloys and Hybrid... Design Mechanical Properties

## Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties

material\_or\_substance

Rows 1 - 8 of 8 from 256

| Alloy type                     | Alloy name                     | Specification | Form                 | Condition or temper | Basis | Thickness (in) | F <sub>tu</sub> , ultimate tensile stress @ RT (ksi) | F <sub>ty</sub> , tensile yield stress @ RT (ksi) | F <sub>cy</sub> , compressive yield stress @ RT (ksi) | F <sub>tu</sub> , ultimate shear stress @ RT (ksi) | F <sub>ty</sub> , shear yield stress @ RT (ksi) | F <sub>brs</sub> , ultimate bearing stress (e/D = 2.0) @ RT (ksi) | F <sub>brs</sub> , ultimate bearing stress (e/D = 1.5) @ RT (ksi) | F <sub>brp</sub> , bearing yield stress (e/D = 2.0) @ RT (ksi) | F <sub>brp</sub> , bearing yield stress (e/D = 1.5) @ RT (ksi) | Table no.  | Physical properties      | Elongation; RA  |
|--------------------------------|--------------------------------|---------------|----------------------|---------------------|-------|----------------|--|---|---|--|---|---|---|--|--|------------|--------------------------|-----------------|
| Aluminum Alloy Sheet Laminates | Aluminum Alloy Sheet Laminates | AMS 4254*     | Sheet; 2/1 Laminates | 2/1 Layup           | S     | 0.032 (max)    | 90(L); 48(LT)  | 48(L); 33(LT)                                     | 35(L); 33(LT)   | NA <sup>b</sup>                                    | 16  | 9(L); 95(LT) <sup>f</sup>   | 78(L); 89(LT) <sup>f</sup>  | 63(L); 66(LT) <sup>f</sup>                                     | 53(L); 56(LT) <sup>f</sup>                                     | 7.5.1.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | Aluminum Alloy Sheet Laminates | AMS 4254*     | Sheet; 3/2 Laminates | 3/2 Layup           | S     | 0.053 (max)    | 96(L); 44(LT)  | 49(L); 30(LT)                                     | 35(L); 30(LT)   | NA <sup>b</sup>                                    | 15  | 8(L); 89(LT) <sup>f</sup>   | 73(L); 84(LT) <sup>f</sup>  | 63(L); 61(LT) <sup>f</sup>                                     | 52(L); 52(LT) <sup>f</sup>                                     | 7.5.1.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | Aluminum Alloy Sheet Laminates | AMS 4254*     | Sheet; 4/3 Laminates | 4/3 Layup           | S     | 0.074 (max)    | 101(L); 43(LT)                                       | 49(L); 30(LT)                                     | 34(L); 30(LT)   | NA <sup>b</sup>                                    | 14  | 8(L); 81(LT) <sup>f</sup>   | 73(L); 80(LT) <sup>f</sup>  | 61(L); 61(LT) <sup>f</sup>                                     | 51(L); 52(LT) <sup>f</sup>                                     | 7.5.1.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | Aluminum Alloy Sheet Laminates | AMS 4254*     | Sheet; 5/4 Laminates | 5/4 Layup           | S     | 0.094 (max)    | 101(L); 42(LT)                                       | 49(L); 30(LT)                                     | 33(L); 30(LT)   | NA <sup>b</sup>                                    | 14  | 7(L); 76(LT) <sup>f</sup>   | 68(L); 75(LT) <sup>f</sup>  | 59(L); 60(LT) <sup>f</sup>                                     | 50(L); 52(LT) <sup>f</sup>                                     | 7.5.1.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | Aluminum Alloy Sheet Laminates | AMS 4302      | Sheet; 2/1 Laminates | 2/1 Layup           | S     | 0.032 (max)    | 103(L); 56(LT)                                       | 76(L); 48(LT)                                     | 46(L); 51(LT)   | 35 <sup>a</sup>                                    | 24  | 14(L) <sup>b</sup> ; 18(LT) <sup>b</sup>                          | 91(L) <sup>b</sup> ; 96(LT) <sup>b</sup>                          | 83(L) <sup>b</sup> ; 84(LT) <sup>b</sup>                       | 73(L) <sup>b</sup> ; 76(LT) <sup>b</sup>                       | 7.5.2.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | Aluminum Alloy Sheet Laminates | AMS 4302      | Sheet; 3/2 Laminates | 3/2 Layup           | S     | 0.053 (max)    | 111(L); 51(LT)                                       | 82(L); 43(LT)                                     | 46(L); 48(LT)   | 33 <sup>a</sup>                                    | 23  | 8(L) <sup>b</sup> ; 84(LT) <sup>b</sup>                           | 83(L) <sup>b</sup> ; 85(LT) <sup>b</sup>                          | 81(L) <sup>b</sup> ; 76(LT) <sup>b</sup>                       | 70(L) <sup>b</sup> ; 69(LT) <sup>b</sup>                       | 7.5.2.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet           | Aluminum Alloy Sheet           | AMS 4302      | Sheet; 4/3 Laminates | 4/3 Layup           | S     | 0.074 (max)    | 114(L); 50(LT)                                       | 82(L); 42(LT)                                     | 44(L); 47(LT)   | 33 <sup>a</sup>                                    | 22  | 8(L) <sup>b</sup> ; 84(LT) <sup>b</sup>                           | 84(L) <sup>b</sup> ; 86(LT) <sup>b</sup>                          | 77(L) <sup>b</sup> ; 75(LT) <sup>b</sup>                       | 66(L) <sup>b</sup> ; 69(LT) <sup>b</sup>                       | 7.5.2.0(b) | View physical properties | View elongation |

13. 'Metallic Materials Properties Development and Standardization (MMPDS-08)'에서 검색된 'Miscellaneous Alloys and Hybrid Materials – Design Mechanical Properties' 를 클릭한 결과입니다.

14. 오렌지색으로 표시된 내용이 검색한 재료명과 물성치입니다.

15. 화면에 표시된 메뉴의 기능은 다음 장에서 언급하겠습니다.

# Knovel Property Search - 물성검색



Knovel® Search Knovel Support Center Welcome Key Lee

Home > Material Search > Search Results > Metal...S-08 > Miscellaneous Alloys and Hybrid... Design Mechanical Properties

Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties

Contents Save Export Unit Converter

material\_or\_substance

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| Alloy type                     | Alloy name                           | Specification | Form                | Condition or temper | Basis | Thickness (in) | F <sub>tu</sub> , ultimate tensile stress @ RT (ksi) | F <sub>ty</sub> , tensile yield stress @ RT (ksi) | F <sub>cy</sub> , compressive yield stress @ RT (ksi) | F <sub>tu</sub> , ultimate shear stress @ RT (ksi) | F <sub>ty</sub> , shear yield stress @ RT (ksi) | F <sub>brs</sub> , ultimate bearing stress (e/D = 2.0) @ RT (ksi) | F <sub>brs</sub> , ultimate bearing stress (e/D = 1.5) @ RT (ksi) | F <sub>brp</sub> , bearing yield stress (e/D = 2.0) @ RT (ksi) | F <sub>brp</sub> , bearing yield stress (e/D = 1.5) @ RT (ksi) | Table no.  | Physical properties      | Elongation; RA  |
|--------------------------------|--------------------------------------|---------------|---------------------|---------------------|-------|----------------|--|---|---|--|---|---|---|--|--|------------|--------------------------|-----------------|
| Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement   | AMS 4254*     | Sheet; 2/1 Laminate | 2/1 Layup           | S     | 0.032 (max)    | 90(L); 48(LT)  | 48(L); 33(LT)                                     | 35(L); 33(LT)   | NA <sup>b</sup>                                    | 16  | 93(L); 95(LT) <sup>f</sup>  | 78(L); 89(LT) <sup>f</sup>  | 63(L); 66(LT) <sup>f</sup>                                     | 53(L); 56(LT) <sup>f</sup>                                     | 7.5.1.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement   | AMS 4254*     | Sheet; 3/2 Laminate | 3/2 Layup           | S     | 0.053 (max)    | 96(L); 44(LT)  | 49(L); 30(LT)                                     | 35(L); 30(LT)   | NA <sup>b</sup>                                    | 15  | 86(L); 89(LT) <sup>f</sup>  | 73(L); 84(LT) <sup>f</sup>  | 63(L); 61(LT) <sup>f</sup>                                     | 52(L); 52(LT) <sup>f</sup>                                     | 7.5.1.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement   | AMS 4254*     | Sheet; 4/3 Laminate | 4/3 Layup           | S     | 0.074 (max)    | 101(L); 43(LT)                                       | 49(L); 30(LT)                                     | 34(L); 30(LT)   | NA <sup>b</sup>                                    | 14  | 83(L); 81(LT) <sup>f</sup>  | 73(L); 80(LT) <sup>f</sup>  | 61(L); 61(LT) <sup>f</sup>                                     | 51(L); 52(LT) <sup>f</sup>                                     | 7.5.1.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement   | AMS 4254*     | Sheet; 5/4 Laminate | 5/4 Layup           | S     | 0.094 (max)    | 101(L); 42(LT)                                       | 49(L); 30(LT)                                     | 33(L); 30(LT)   | NA <sup>b</sup>                                    | 14  | 77(L); 76(LT) <sup>f</sup>  | 68(L); 75(LT) <sup>f</sup>  | 59(L); 60(LT) <sup>f</sup>                                     | 50(L); 52(LT) <sup>f</sup>                                     | 7.5.1.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | 7475-T761 Aramid Fiber Reinforcement | AMS 4302      | Sheet; 2/1 Laminate | 2/1 Layup           | S     | 0.032 (max)    | 103(L); 56(LT)                                       | 76(L); 48(LT)                                     | 46(L); 51(LT)   | 35 <sup>a</sup>                                    | 24  | 104(L) <sup>b</sup> ; 108(LT) <sup>b</sup>                        | 91(L) <sup>b</sup> ; 96(LT) <sup>b</sup>                          | 83(L) <sup>b</sup> ; 84(LT) <sup>b</sup>                       | 73(L) <sup>b</sup> ; 76(LT) <sup>b</sup>                       | 7.5.2.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | 7475-T761 Aramid Fiber Reinforcement | AMS 4302      | Sheet; 3/2 Laminate | 3/2 Layup           | S     | 0.053 (max)    | 111(L); 51(LT)                                       | 82(L); 43(LT)                                     | 46(L); 48(LT)   | 33 <sup>a</sup>                                    | 23  | 87(L) <sup>b</sup> ; 88(LT) <sup>b</sup>                          | 83(L) <sup>b</sup> ; 85(LT) <sup>b</sup>                          | 81(L) <sup>b</sup> ; 76(LT) <sup>b</sup>                       | 70(L) <sup>b</sup> ; 69(LT) <sup>b</sup>                       | 7.5.2.0(b) | View physical properties | View elongation |
| Aluminum Alloy Sheet Laminates | 7475-T761 Aramid Fiber Reinforcement | AMS 4302      | Sheet; 4/3 Laminate | 4/3 Layup           | S     | 0.074 (max)    | 114(L); 50(LT)                                       | 82(L); 42(LT)                                     | 44(L); 47(LT)   | 33 <sup>a</sup>                                    | 22  | 88(L) <sup>b</sup> ; 86(LT) <sup>b</sup>                          | 84(L) <sup>b</sup> ; 86(LT) <sup>b</sup>                          | 77(L) <sup>b</sup> ; 75(LT) <sup>b</sup>                       | 66(L) <sup>b</sup> ; 69(LT) <sup>b</sup>                       | 7.5.2.0(b) | View physical properties | View elongation |

1. 사용자 이동경로: 검색 도구로 사용

2. 확장 모드: 확장된 보기 화면으로 변환됩니다

3. Content: 해당 기술서적 원문 목차를 표시

4. Save: 개인계정에 저장

5. Export: 현재의 표를 PDF나 Excel 파일로 내려받기

6. Unit Converter: 단위변환기

7. Search: 검색키워드 확인

8. Filter: 오름차순 정렬, 내림차순 정렬 및 필터링과 원하지 않는 열 제거 가능

# Knovel Property Search - 물성검색



Knovel

Search Knovel

Support Center Welcome Key Lee

Home > Material Search > Search...ists > Metal...S-08 > Miscellaneous Alloys and Hybrid... Design Mechanical Properties

## Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties

Export PDF Microsoft Excel Comma Separated Value [CSV]

Unit Converter

material\_or\_substance

Rows 1 - 8 of 8 from 256

| Alloy type               | Alloy name                     | Condition or Temper   | Basis     | Thickness (in) | F <sub>tu</sub> ultimate tensile stress @ RT (ksi) | F <sub>ty</sub> tensile yield stress @ RT (ksi) | F <sub>cy</sub> compressive yield stress @ RT (ksi) | F <sub>tu</sub> ultimate shear stress @ RT (ksi) | F <sub>yy</sub> shear yield stress @ RT (ksi) | F <sub>brs</sub> ultimate bearing stress (e/D = 2.0) @ RT (ksi) | F <sub>brs</sub> ultimate bearing stress (e/D = 1.5) @ RT (ksi) | F <sub>brp</sub> bearing yield stress (e/D = 2.0) @ RT (ksi) | F <sub>brp</sub> bearing yield stress (e/D = 1.5) @ RT (ksi) | Table no.                                | Physical properties | Elongation; n; RA        |                 |
|--------------------------|--------------------------------|---|-----------|----------------|--|---|---|--|---|---|---|--|--|--|---------------------|--------------------------|-----------------|
| <input type="checkbox"/> | Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement AMS 4254* Sheet; 2/1 Laminate  | 2/1 Layup | S              | 0.032 (max)  | 90(L); 48(LT)                                   | 48(L); 33(LT)                                       | 35(L); 33(LT)                                    | NA <sup>b</sup>                               | 16  | 93(L); 95(LT) <sup>f</sup>                                      | 78(L); 89(LT) <sup>f</sup>                                   | 63(L); 66(LT) <sup>f</sup>                                   | 53(L); 56(LT) <sup>f</sup>               | 7.5.1.0(b)          | View physical properties | View elongation |
| <input type="checkbox"/> | Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement AMS 4254* Sheet; 3/2 Laminate  | 3/2 Layup | S              | 0.053 (max)  | 96(L); 44(LT)                                   | 49(L); 30(LT)                                       | 35(L); 30(LT)                                    | NA <sup>b</sup>                               | 15  | 86(L); 89(LT) <sup>f</sup>                                      | 73(L); 84(LT) <sup>f</sup>                                   | 63(L); 61(LT) <sup>f</sup>                                   | 52(L); 52(LT) <sup>f</sup>               | 7.5.1.0(b)          | View physical properties | View elongation |
| <input type="checkbox"/> | Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement AMS 4254* Sheet; 4/3 Laminate  | 4/3 Layup | S              | 0.074 (max)  | 101(L); 43(LT)                                  | 49(L); 30(LT)                                       | 34(L); 30(LT)                                    | NA <sup>b</sup>                               | 14  | 83(L); 81(LT) <sup>f</sup>                                      | 73(L); 80(LT) <sup>f</sup>                                   | 61(L); 61(LT) <sup>f</sup>                                   | 51(L); 52(LT) <sup>f</sup>               | 7.5.1.0(b)          | View physical properties | View elongation |
| <input type="checkbox"/> | Aluminum Alloy Sheet Laminates | 2024-T3 Aramid Fiber Reinforcement AMS 4254* Sheet; 5/4 Laminate  | 5/4 Layup | S              | 0.094 (max)  | 101(L); 42(LT)                                  | 49(L); 30(LT)                                       | 33(L); 30(LT)                                    | NA <sup>b</sup>                               | 14  | 77(L); 76(LT) <sup>f</sup>                                      | 68(L); 75(LT) <sup>f</sup>                                   | 59(L); 60(LT) <sup>f</sup>                                   | 50(L); 52(LT) <sup>f</sup>               | 7.5.1.0(b)          | View physical properties | View elongation |
| <input type="checkbox"/> | Aluminum Alloy Sheet Laminates | 7475-T761 Aramid Fiber Reinforcement AMS 4302 Sheet; 2/1 Laminate | 2/1 Layup | S              | 0.032 (max)  | 103(L); 56(LT)                                  | 76(L); 48(LT)                                       | 46(L); 51(LT)                                    | 35 <sup>a</sup>                               | 24  | 104(L) <sup>b</sup> ; 108(LT) <sup>b</sup>                      | 91(L) <sup>b</sup> ; 96(LT) <sup>b</sup>                     | 83(L) <sup>b</sup> ; 84(LT) <sup>b</sup>                     | 73(L) <sup>b</sup> ; 76(LT) <sup>b</sup> | 7.5.2.0(b)          | View physical properties | View elongation |
| <input type="checkbox"/> | Aluminum Alloy Sheet Laminates | 7475-T761 Aramid Fiber Reinforcement AMS 4302 Sheet; 3/2 Laminate | 3/2 Layup | S              | 0.053 (max)  | 111(L); 51(LT)                                  | 82(L); 43(LT)                                       | 46(L); 48(LT)                                    | 33 <sup>a</sup>                               | 23  | 87(L) <sup>b</sup> ; 88(LT) <sup>b</sup>                        | 83(L) <sup>b</sup> ; 85(LT) <sup>b</sup>                     | 81(L) <sup>b</sup> ; 76(LT) <sup>b</sup>                     | 70(L) <sup>b</sup> ; 69(LT) <sup>b</sup> | 7.5.2.0(b)          | View physical properties | View elongation |
| <input type="checkbox"/> | Aluminum Alloy Sheet Laminates | 7475-T761 Aramid Fiber Reinforcement AMS 4302 Sheet; 4/3 Laminate | 4/3 Layup | S              | 0.074 (max)  | 114(L); 50(LT)                                  | 82(L); 42(LT)                                       | 44(L); 47(LT)                                    | 33 <sup>a</sup>                               | 22  | 88(L) <sup>b</sup> ; 86(LT) <sup>b</sup>                        | 84(L) <sup>b</sup> ; 86(LT) <sup>b</sup>                     | 77(L) <sup>b</sup> ; 75(LT) <sup>b</sup>                     | 66(L) <sup>b</sup> ; 69(LT) <sup>b</sup> | 7.5.2.0(b)          | View physical properties | View elongation |

13. **Export** 메뉴를 클릭하면 제공되는 표를 PDF, Excel 및 CSV 파일로 내려받기가 가능합니다.

14. 각각의 열 상단에 역삼각형을 클릭하면 오름차순 정렬, 내림차순 정렬 및 필터링과 원하지 않는 열 제거 가능하며, 변경사항은 내려받기한 파일에도 적용됩니다.

15. 주의사항은 일부 원문서적 내 표는 이러한 형태로 변환되지 않은 경우가 있으므로, 기본검색 후 원본내용을 확인하면 보다 많은 내용을 찾을 수 있습니다.

# Knovel Graphs

# Knovel Graphs - 그래프



The screenshot shows the Knovel website interface. At the top, there is a navigation bar with 'Knovel' on the left, 'Support Center' in the middle, and 'Welcome Key Lee' on the right. Below the navigation bar, there are two main search options: 'SEARCH KNOVEL' and 'PROPERTY SEARCH'. A search bar is highlighted with a red box, containing the text 'aluminum alloy phase\*'. Below the search bar, there are three main content areas: 'Recent Activity' with a list of recently viewed documents, 'Search for Pure Compounds' with a bar chart and a 'Search Chemicals' button, and 'Keep Your Own Notes' with a table and a 'Learn More' button. A 'Feedback' button is located on the right side of the page.

Knovel

Support Center Welcome Key Lee

SEARCH KNOVEL PROPERTY SEARCH

aluminum alloy phase\*

Advanced Search

Recent Activity

Recently Viewed

- ☑ Metallic Materials Properties Development and S...
- ☑ ASM Handbook, Volume 21 - Composites
- ☑ Numerical Computation of Internal and External ...

Recent Searches

- Q aluminum alloy phase
- Q aluminum alloy phase-gram
- Q aluminum alloy phasegram

Go to My Knovel

Search for Pure Compounds

Visually search for pure compound chemicals from the NIST Thermodynamic database that meet your requirements.

Search Chemicals

Keep Your Own Notes

Save personal comments, explanations, and reminders in Knovel documents.

|  | 150 | 300  | 400  | 600   |
|--|-----|------|------|-------|
|  |     | 51.1 | 68.1 | 102.1 |

01:22 PM Jan

Compare to January field data

Cancel Add Note

Learn More

Feedback

1. <https://app.knovel.com>에 접속한 후 검색창에 'Aluminum alloy phase\*'를 검색해보겠습니다.

# Knovel Graphs - 그래프



Knovel

Support Center | Welcome Key Lee

Home > Search for: aluminum alloy phase\*

aluminum alloy phase\*

Advanced Search

Share Search Results | Save Search Query | Video

Refine By Related Concept

- aluminides
- alloy systems
- metal-matrix composites
- diffusion coatings
- grain refinement
- alloying elements
- stress-corrosion cracking
- aluminium alloys

[+] More

External Links

Compendex from Engineering Village

All (1100+) Books / Text (1000+) **Graphs / Tables (30+)** Definitions (26)

Graphs Tables

Sort by Relevancy

1

Include out of subscription results

[GRAPH] Interactive Graphs and Phase Diagrams

From Materials Properties Handbook - Titanium Alloys

Save Result

table preview - 2 of 2 records

View Full Table

| graph digitizer            | material group       | alloy designation | uns no. | trade or common name   | x-axis label          | y-axis label    | graph title  | text                      |
|----------------------------|----------------------|-------------------|---------|------------------------|-----------------------|-----------------|--|---------------------------|
| <a href="#">Open Graph</a> | beta titanium alloys | Ti-13V-11Cr-3Al   | R58010  | Ti-13-11-3 and B120VCA | Aluminum content, wt% | Temperature, °C | Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content... | <a href="#">view text</a> |
| <a href="#">Open Graph</a> | beta titanium alloys | Ti-13V-11Cr-3Al   | R58010  | Ti-13-11-3 and B120VCA | Aluminum content, wt% | Temperature, °F | Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content... | <a href="#">view text</a> |

Sample of table data is provided above. Click to view complete table and search results.

[GRAPH] Interactive Graphs

Save Result

2. 검색된 콘텐츠 종류 중 **Graphs/Tables** (그래프/표) 를 클릭해보겠습니다.
3. 클릭하면 **'Graphs', 'Tables'** 이 두 가지 콘텐츠 종류가 나타나며, 원하시는 콘텐츠 종류만 정렬하여 볼 수 있습니다.
4. 이번에는 **'Graphs'**를 클릭하여 그래프만 볼 수 있도록 정렬하였습니다. 검색결과 좌측에 [Graph] 표시가 콘텐츠의 종류를 나타냅니다.
5. 검색결과 중 **'Materials Properties Handbook – Titanium Alloys'**에서 발췌된 **'Interactive Graph and Phase Diagram'**을 클릭해보겠습니다.

# Knovel Graphs - 그래프



Knovel Search Knovel Support Center Welcome Key Lee

Home > Search for: aluminum alloy phase\* > Materials Properti... - Titanium Alloys > Interactive Graphs and Phase Diagrams

Interactive Graphs and Phase Diagrams Video Info

aluminum alloy phase\*

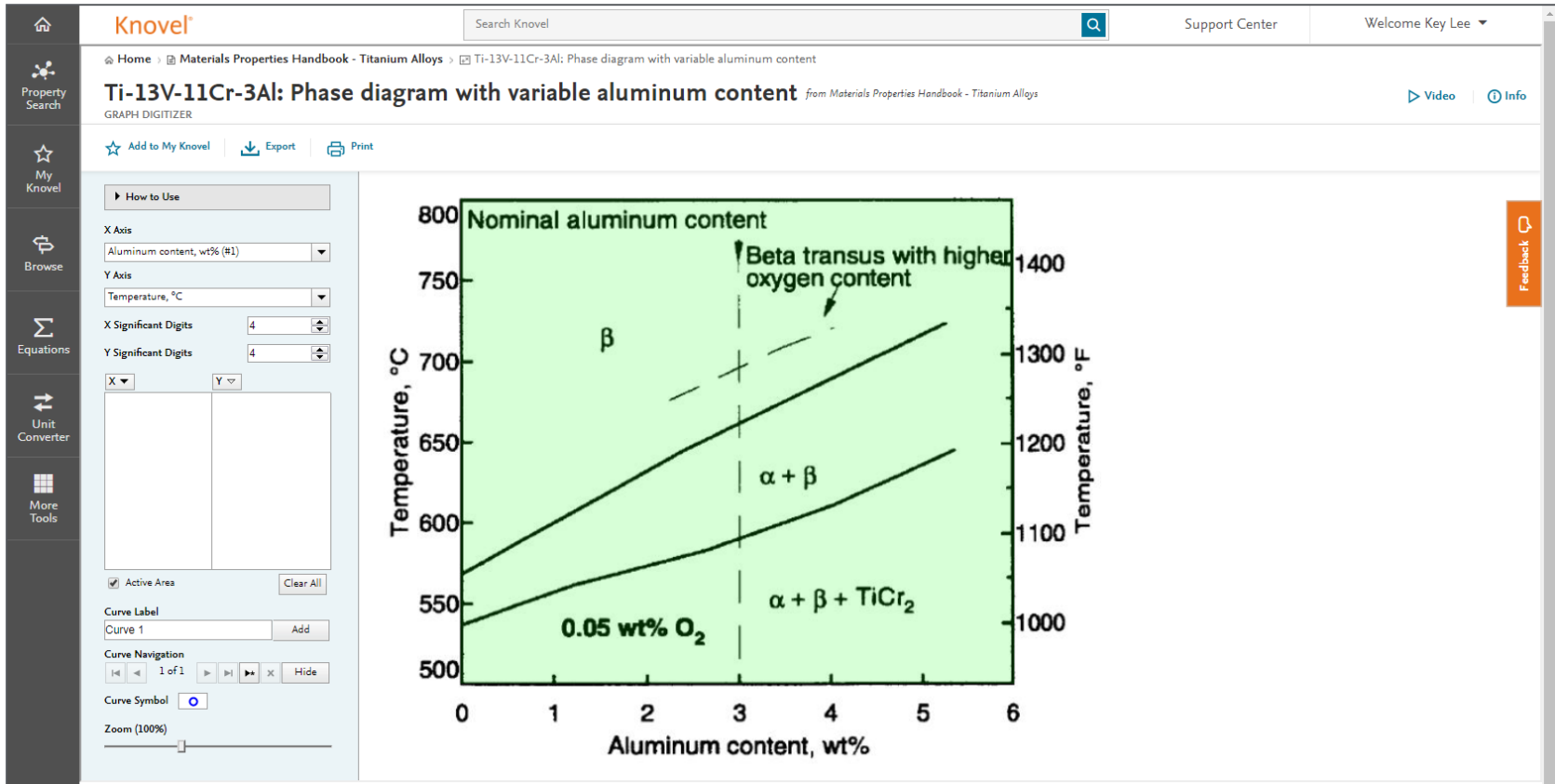
Rows 1 - 2 of 2 from 3583 Page 1 of 1

| Graph digitizer                                     | Material group       | Alloy designation | Uns no. | Trade or common name   | X-axis label          | Y-axis label    | Graph title   | Text                      |
|---|----------------------|-------------------|---------|------------------------|-----------------------|-----------------|---|---------------------------|
| <input type="checkbox"/> <a href="#">Open Graph</a> | beta titanium alloys | Ti-13V-11Cr-3Al   | R58010  | Ti-13-11-3 and B120VCA | Aluminum content, wt% | Temperature, °C | Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content | <a href="#">view text</a> |
| <input type="checkbox"/> <a href="#">Open Graph</a> | beta titanium alloys | Ti-13V-11Cr-3Al   | R58010  | Ti-13-11-3 and B120VCA | Aluminum content, wt% | Temperature, °F | Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content | <a href="#">view text</a> |

6. 화면에 나타난 표에서는 그래프에 대한 간단한 설명과 X, Y 축에 대한 내용에 대해서 언급합니다.
7. 오른쪽 'view text' 링크를 클릭하면 해당 그래프에 관한 원문으로 이동합니다.
8. 왼쪽에 있는 파란색 아이콘을 클릭해 보겠습니다.



# Knovel Graphs - 그래프



9. 파란색 아이콘을 클릭하면 원문에 있는 그래프가 Knovel에 의해 제공됩니다.

10. 제공되는 그래프는 단지 스캔된 그림이 아닌 좌표까지 함께 제공되는 그래프로서, 마우스로 클릭하여 좌표를 잡을 수 있습니다.

# Knovel Graphs - 그래프



Knovel<sup>®</sup> Search Knovel Support Center Welcome Key Lee

Home > Materials Properties Handbook - Titanium Alloys > Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content

### Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content

GRAPH DIGITIZER

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How to Use

X Axis: Aluminum content, wt% (#1)  
Y Axis: Temperature, °C  
X Significant Digits: 4  
Y Significant Digits: 4

| X       | Y     |
|---------|-------|
| 0.05366 | 538.7 |
| 0.3249  | 545.0 |
| 0.6764  | 551.8 |
| 0.9376  | 557.0 |
| 1.289   | 563.3 |
| 1.601   | 567.8 |
| 1.872   | 572.4 |
| 2.324   | 578.1 |
| 2.866   | 587.8 |
| 3.368   | 598.7 |
| 3.851   | 608.4 |

Curve Label: Curve 1 Add  
Curve Navigation: 1 of 1 Hide  
Curve Symbol:   
Zoom (100%)

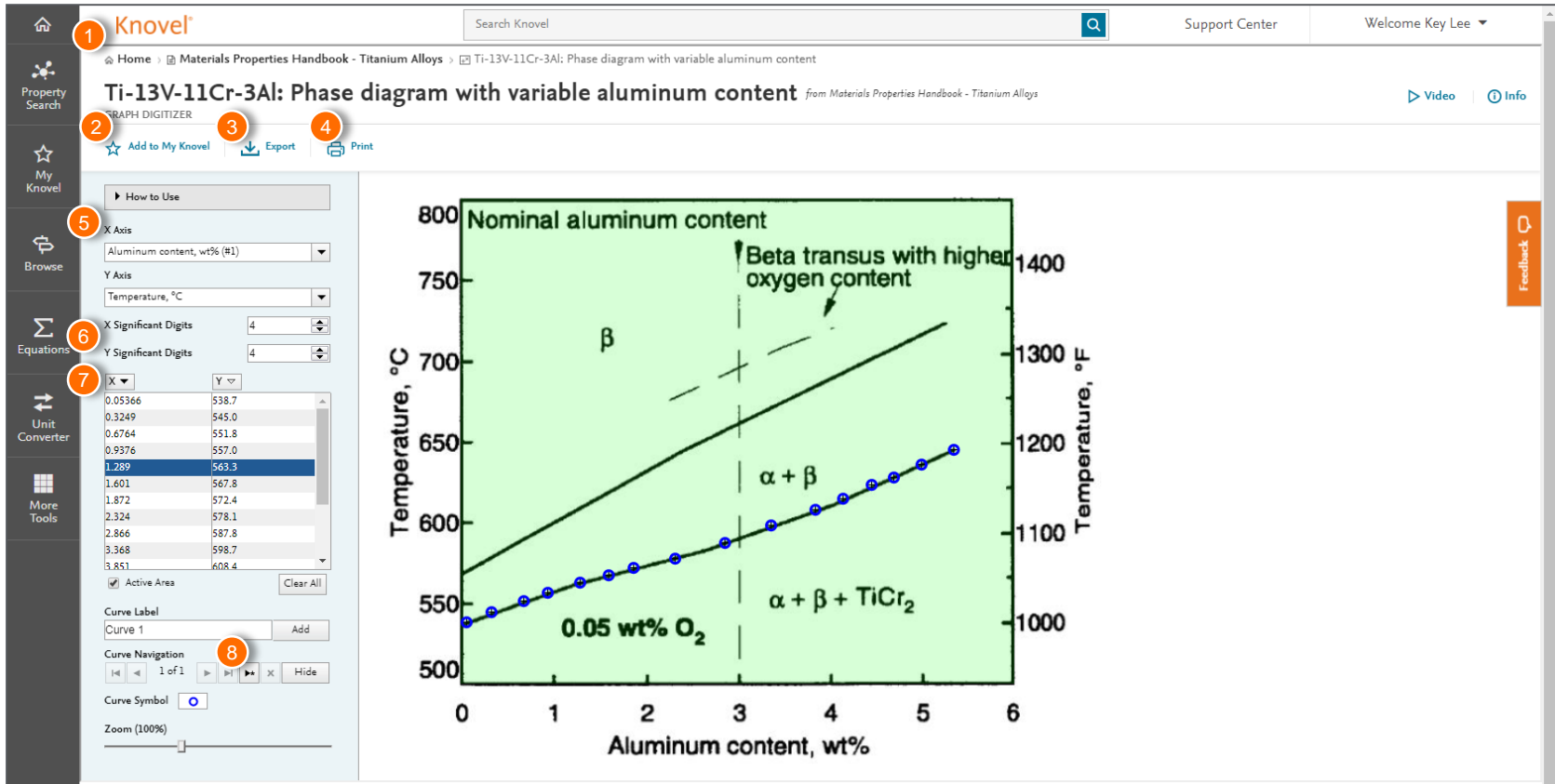
800 750 700 650 600 550 500  
Temperature, °C  
1400 1300 1200 1100 1000  
Temperature, °F

Nominal aluminum content  
Beta transus with higher oxygen content  
 $\beta$   
 $\alpha + \beta$   
 $\alpha + \beta + \text{TiCr}_2$   
0.05 wt% O<sub>2</sub>

Aluminum content, wt%

11. 그래프에 마우스로 클릭하는 방식으로 그래프를 디지털라이징 하였습니다.
12. 클릭된 좌표는 왼쪽 창에 정리되어 나타나며, 이를 Excel로 내려받기 할 수 있습니다.
13. 그래프와 관련된 자세한 기능은 다음장에서 언급하겠습니다.

# Knovel Graphs - 그래프



1. 사용자 이동경로: 검색 도구로 사용

2. Add to My Knovel: 개인계정에 저장

3. Export: 클릭된 좌표를 CSV, Excel 파일, 그림파일 등으로 저장

4. Print: 그래프를 출력

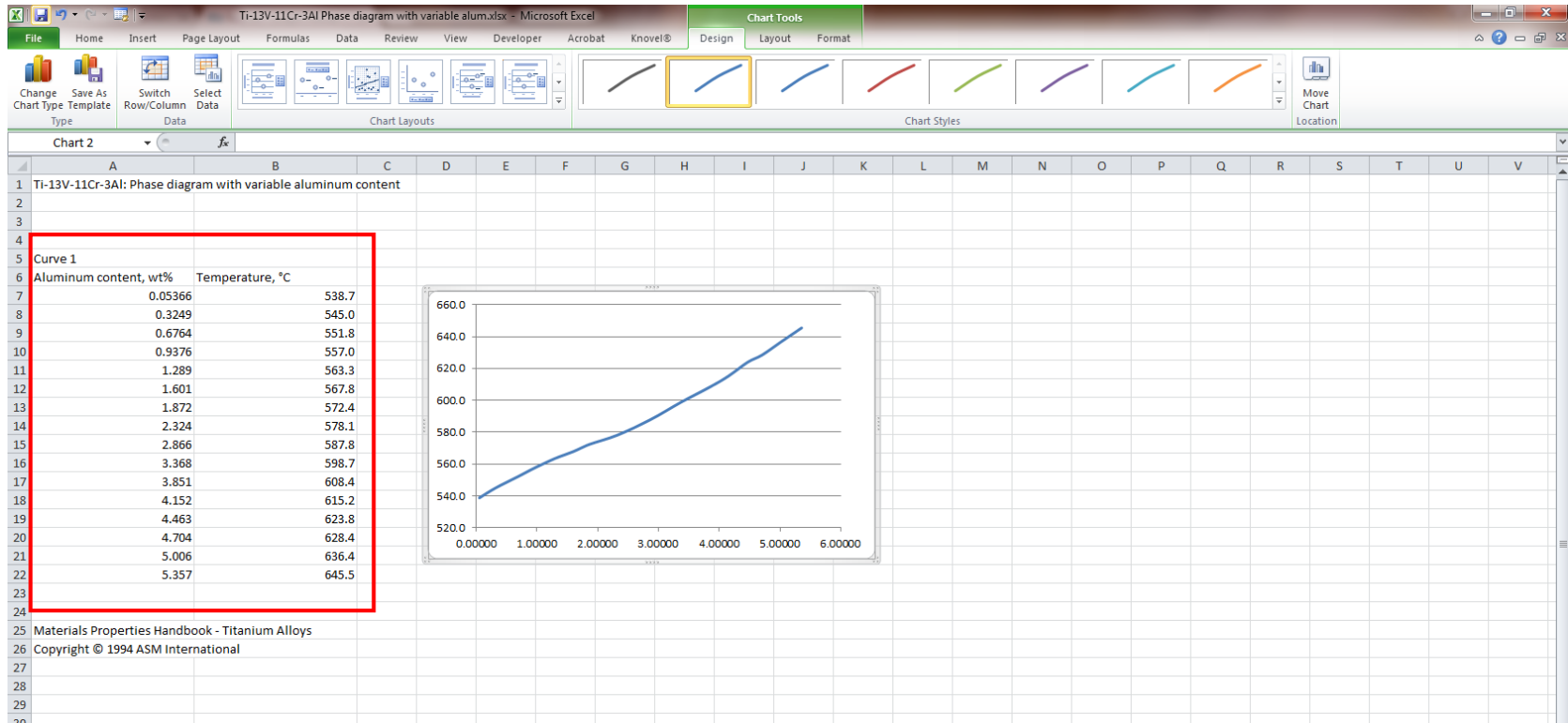
5. Axis: 그래프 X, Y축에 대한 설명

6. Significant Digit: 클릭된 좌표축의 자릿수 지정

7. 좌표창: 클릭된 좌표정보를 표시

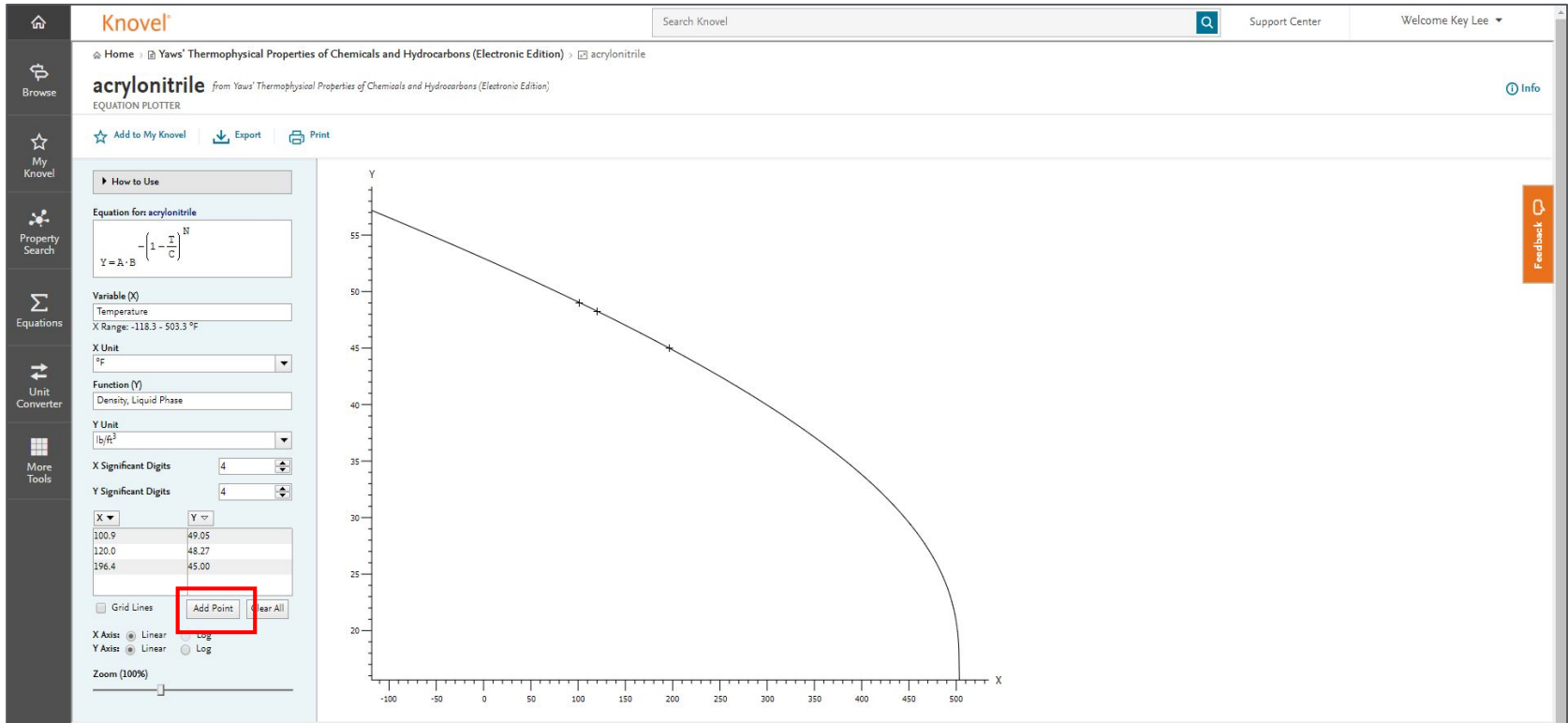
8. New Curve: 추가로 다른 곡선에 대한 좌표가 필요할 때 새로 생성

# Knovel Graphs - 그래프



14. 클릭된 좌표를 엑셀로 내려받기를 하였습니다. 내려받기한 좌표는 엑셀에서 다시 그래프로 생성가능하므로, 연구 중 실험내용이나, 수치해석 결과와 추세선 등의 비교가 가능합니다.
15. 주의사항은 일부 원본서적 내 표는 이러한 형태로 변환되지 않은 경우가 있으므로, 기본검색 후 원본내용을 확인하면 보다 많은 내용을 찾을 수 있습니다.

# Knovel Graphs - 그래프



15. 앞서 언급한 내용과 다른 형태의 그래프입니다. **Equation Plotter**로서 앞서 언급한 스캔방식의 그래프와 다르게 추세식을 이용하여 도시한 그래프로서, 클릭하여 좌표를 입력하거나, **Add Point**를 클릭하여 직접 좌표를 입력할 수 있습니다.

16. **Unit (단위)** 변환도 간단하게 클릭한번으로 변환이 가능합니다.

# Browse

# Knovel Browse - 서적검색



Knovel

Support Center Welcome Key Lee

SEARCH KNOVEL PROPERTY SEARCH Video

calculating flow rate

**My Knovel**

Recently Viewed

- International Encyclopedia of Ergonomics and Human F...
- Robotics, Automation, and Control in Industrial and Ser...
- Innovative Production Machines and Systems - Fifth I\*P...

Recent Searches

- co-bot
- cobot
- cooperat\* robot

Go to My Knovel

**Knovel at a Glance**

Instant access to thousands of materials and millions of properties.

Plastics Chemicals Composites Alloys Metals

Search Properties

**Keep Your Own Notes**

Save personal comments, explanations, and reminders in Knovel documents.

|  | 150  | 300  | 400   | 600 |
|--|------|------|-------|-----|
|  | 51.1 | 68.1 | 102.1 |     |

01:22 PM Jan

Compare to January field data

Cancel Add Note

Feedback

1. <https://app.knovel.com>에 접속한 후 왼쪽 세번째 메뉴에 표시된 'Browse'를 클릭하면 Knovel에서 제공하는 서적 정보를 차례대로 검색할 수 있습니다.

# Knovel Browse - 서적검색



The screenshot displays the Knovel Browse interface. On the left is a vertical navigation menu with icons for Home, Property Search, My Knovel, Browse (highlighted), Equations, Unit Converter, and More Tools. The main content area is titled "Browse all Subjects" and includes a search filter "Filter on subject names". It is divided into three sections: "SUBJECTS", "PREMIUM OFFERINGS", and "INTRODUCTORY". The "SUBJECTS" section lists 35 categories, the "PREMIUM OFFERINGS" section lists 6 categories, and the "INTRODUCTORY" section lists 2 items. A "Try Our Mobile App" section on the right promotes downloading the app from the App Store and Google Play. A "Feedback" button is located on the far right edge.

**Browse all Subjects**

Technical References **New** Content

All Content My Subscription

Filter on subject names

**SUBJECTS**

- > Adhesives, Coatings, Sealants & Inks
- > Aerospace & Radar Technology
- > Biochemistry, Biology & Biotechnology
- > Ceramics & Ceramic Engineering
- > Chemistry & Chemical Engineering
- > Civil Engineering & Construction Materials
- > Composites
- > Computer Hardware Engineering
- > Earth Sciences
- > Electrical & Power Engineering
- > Electronics & Semiconductors
- > Engineering Management & Leadership
- > Environment & Environmental Engineering
- > Fire Protection Engineering & Emergency Response
- > Food Science
- > General Engineering & Project Administration
- > Industrial Engineering & Operations Management
- > Manufacturing Engineering
- > Marine Engineering & Naval Architecture
- > Mechanics & Mechanical Engineering
- > Metals & Metallurgy
- > Mining Engineering & Extractive Metallurgy
- > Nanotechnology
- NIST Thermodynamics Pure Compounds
- > Nondestructive Testing & Evaluation
- > Oil & Gas Engineering
- > Optics & Photonics
- > Pharmaceuticals, Cosmetics & Toiletries
- > Plastics & Rubber
- > Process Design, Control & Automation
- Regulatory Information
- > Safety & Industrial Hygiene
- > Software Engineering
- > Sustainable Energy & Development
- > Textiles
- > Transportation Engineering
- > Welding Engineering & Materials Joining

**PREMIUM OFFERINGS**

- AICHE/CCPS - Center for Chemical Process Safety
- ASM International Materials Collection
- ASME Boiler and Pressure Vessel Code, Section II - Materials
- Chemical Resistance Database: Plastics and Elastomers
- DIPPR Project 801
- Knovel Polymer Matrix Composites Database

**INTRODUCTORY**

- Knovel Sampler
- Try Knovel

**Try Our Mobile App**

Download our mobile app to search and read engineering technical references anywhere, even when you're offline.

Learn More

Feedback

2. Knovel에서 제공하는 35개 주제분야와 6개의 프리미엄 주제분야를 확인할 수 있습니다.

3. 원하는 주제분야를 선택하여 클릭하면 해당 주제분야에 대한 서적 리스트를 볼 수 있습니다.



# Knovel Browse - 서적검색



The screenshot shows the Knovel Browse interface. At the top, there is a search bar with the text 'Search Knovel' and a magnifying glass icon. To the right of the search bar are links for 'Support Center' and 'Welcome Key Lee'. Below the search bar, the breadcrumb navigation reads 'Home > Browse > Industrial Engineering & Operations Management'. The main heading is 'Industrial Engineering & Operations Management' with a red box around it. Below this heading, there is a 'References (375)' link. On the left side, there is a sidebar with 'TECHNICAL REFERENCES' and a list of categories: 'All Topics (375)', 'Human Engineering & Ergonomics (9)', 'Industrial Engineering & Systems Engineering (94)', 'Project Management (144)', 'Six Sigma, Lean & Quality Management (83)', and 'Supply Chain Management & Logistics (45)'. A red box highlights the 'All Topics (375)' category. In the main content area, there is a search bar with 'Risk Management' entered and a red box around it, showing '7 of 375 titles'. Below the search bar, there is a description of the topic: 'Covers ergonomic design, human factors engineering, Workspace design, equipment maintenance and facility management, project management, quality control and six sigma, and supply chain management. Of... More'. Below this, there are three book listings: 'Advanced Quality Auditing - An Auditor's Review of Risk Management, Lean Improvement, and Data Analysis' by Coleman, Lance B. Sr. (2015); 'Engineering Risk Management' by Meyer, Thierry; Reniers, Genserik (2013); and 'Practice Standard for Project Risk Management' by PMI (2009). Each listing includes a small book cover icon and a 'More' link.

4. 'Industrial Engineering & Operations Management' 주제분야를 선택하여 클릭하면 다음과 같은 화면이 나옵니다. 해당 주제분야는 375권의 서적을 보유하고 있음을 확인할 수 있습니다.
5. 'Risk Management'를 위의 창에서 검색해 보았습니다. 검색결과 해당 주제분야 내에서 Risk Management가 제목에 포함된 서적이 7권이 검색되었음을 알 수 있습니다.

# Knovel Resource - Book



The screenshot shows the Knovel website interface. On the left is a dark sidebar with navigation icons: Home, Property Search, My Knovel, Browse, Equations, Unit Converter, and More Tools. The main content area has a breadcrumb trail: Home > Browse > Industri...agement > Advanced Quality Auditing - An Auditor's ...ment, Lean Improvement, and Data Analysis. Below this is a book cover for 'Advanced Quality Auditing' by Lance B. Coleman. The title is 'Advanced Quality Auditing - An Auditor's Review of Risk Management, Lean Improvement, and Data Analysis'. A short description follows: 'The purpose of this book is to accept that challenge in presenting two ways that auditors can "learn [to speak] the language of upper management" either by helping to drive continuous improvement or by helping to manage risk. This book has essential information that will help guide an organizations efforts to glean more value from their audit process. It helps grow the audit function beyond verification audits. It provides insight for using the audit function to improve organizations using lean'. There are buttons for 'Save to My Knovel', 'Citation', 'Save to Mobile', and 'Share'. A search box labeled 'Search Within' is on the right. Below the description is a 'Try Our Mobile App' section with download links for the App Store and Google Play. To the right is a 'NEW!' section titled 'Make your own Notes in this book' with a pencil icon. Below that is a table of contents with items like 'Front Matter', 'List of Figures and Tables', 'Introduction', 'Table of Contents', and numbered chapters: '1. Traditional Audits', '2. Lean Auditing for Business Improvement: Taking a Lean Journey Down the Audit Trail', '3. Risk-Based Quality Auditing (RBQA)', '4. Data and Trend Analysis', and '5. Root Cause Analysis and Corrective Action'. A 'Feedback' button is on the far right edge.

6. 검색된 서적 중 하나를 클릭해보았습니다. 앞서 키워드를 사용하여 검색한 서적과 동일한 방식의 정보가 제공됩니다.
7. 해당 화면에서는 서적의 **제목, 설명, 서적정보, 목차** 등이 제공되며, 각 Chapter를 클릭하면 원문확인이 가능합니다.

# Registration & Tools

# Knovel Registration - 계정등록



The screenshot shows the Knovel website interface. At the top right, there is a 'Support Center' link and a user greeting 'Welcome Key Lee'. The main navigation bar includes 'SEARCH KNOVEL' and 'PROPERTY SEARCH' tabs. A search bar contains the text 'calculating flow rate'. Below the search bar, there are three main content areas: 'My Knovel' with a 'Recently Viewed' list, 'Knovel at a Glance' with a central diagram of material categories (Plastics, Metals, Alloys, Composites, Chemicals) and a 'Search Properties' button, and 'Keep Your Own Notes' with a table and a 'Learn More' button. A vertical 'Feedback' button is on the right side.

| 150  | 300  | 400   | 600 |
|------|------|-------|-----|
| 51.1 | 68.1 | 102.1 |     |

1. <https://app.knovel.com>에 접속한 후 오른쪽 상단을 보면 'Welcome...' 또는 'Create Account' 을 클릭합니다.
2. 계정등록은 선택사항이지만, 보다 원활한 이용을 위해 추천드리는 사항입니다.

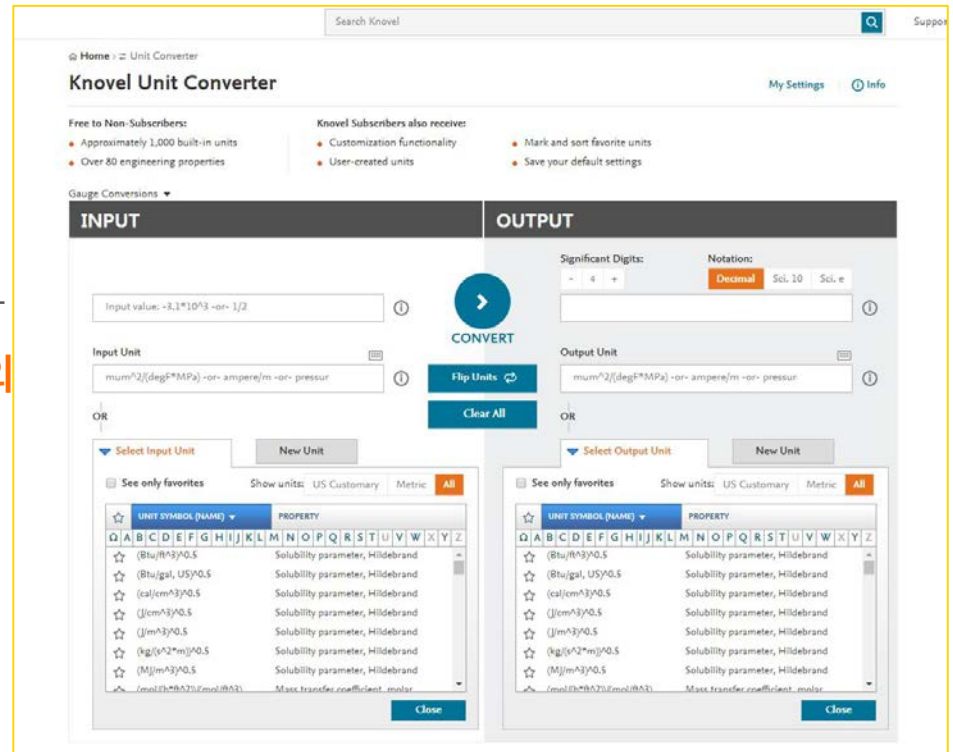
# Knovel Registration - 계정등록



3. 사용자의 E-mail 주소 (기관 E-mail), 비밀번호 (영문대문자, 소문자, 숫자 한개 씩 최소 8자 이상), 이름, 성, 확인용 그래픽을 입력 후 사용규정준수 서약 클릭하면 계정이 생성됩니다.
4. 계정생성 후 본인의 E-mail로 **Authorization Mail**이 전송되며 확인링크를 클릭하면 계정생성이 완료됩니다.

# Knovel Unit Converter - 단위변환기

- Knovel은 공학에서 발생하는 복잡한 단위를 변환시킬 수 있는 단위변환기를 제공
- Knovel 단위변환기에서는 다양한 공학용 단위가 수록되어있으며, 사용자 자신만의 단위생성가능



# Knovel Unit Converter - 단위변환기



The screenshot displays the Knovel website interface. On the left, a dark sidebar contains navigation options: Home, Property Search, My Knovel, Browse, Equations, and Unit Converter (highlighted with a red box). The main content area features a 'Go to Full Unit Converter' button (highlighted with a red box) and a conversion example: 1  $\text{ft/h}^2$  is converted to  $9.26\text{e-}7$   $\text{in/s}^2$ . Below this, there are sections for 'Search for Materials' and 'Keep Your Own Notes'. The 'Search for Materials' section includes a diagram with categories: Plastics, Metals, Alloys, Chemicals, and Composites. The 'Keep Your Own Notes' section shows a table with columns 150, 300, 400, 600 and rows 51.1, 68.1, 102.1. A note entry is visible with the text 'Compare to January field data' and buttons for 'Cancel' and 'Add Note'.

1. <https://app.knovel.com>에 접속한 후 왼쪽 다섯번째 메뉴에 표시된 'Unit Converter'를 클릭하면 Knovel에서 제공하는 간단한 단위변환기를 사용할 수 있습니다.
2. 간단한 단위변환기 상부의 'Go to Full Unit Converter'를 클릭하면 완전한 단위변환기에 접속할 수 있습니다.

# Knovel Unit Converter - 단위 변환기



Knovel<sup>®</sup> Search Knovel Support Center Welcome Key Lee

Free to Non-Subscribers:
 

- Approximately 1,000 built-in units
- Over 80 engineering properties

Registered Knovel users also receive:
 

- Customization functionality
- User-created units
- Mark and sort favorite units
- Save your default settings

My Settings Info

Gauge Conversions

**INPUT**

1 Input value:

2 Input Unit:

OR

3 Select Input Unit

4 My favorites

5 Show units: US Customary Metric All

| UNIT SYMBOL (NAME)        | PROPERTY                         |
|---------------------------|----------------------------------|
| (Btu/ft^3)^0.5            | Solubility parameter, Hildebrand |
| (Btu/gal, US)^0.5         | Solubility parameter, Hildebrand |
| (cal/cm^3)^0.5            | Solubility parameter, Hildebrand |
| (J/cm^3)^0.5              | Solubility parameter, Hildebrand |
| (J/m^3)^0.5               | Solubility parameter, Hildebrand |
| (kg/(s^2*m))^0.5          | Solubility parameter, Hildebrand |
| (MJ/m^3)^0.5              | Solubility parameter, Hildebrand |
| (mol/(h*ft^2))/(mol/ft^3) | Mass transfer coefficient, molar |

**OUTPUT**

Significant Digits: - 4 +

Notation: Decimal Sci. 10 Sci. e

Output Unit:

OR

Select Output Unit

See only favorites

Show units: US Customary Metric All

| UNIT SYMBOL (NAME)        | PROPERTY                         |
|---------------------------|----------------------------------|
| (Btu/ft^3)^0.5            | Solubility parameter, Hildebrand |
| (Btu/gal, US)^0.5         | Solubility parameter, Hildebrand |
| (cal/cm^3)^0.5            | Solubility parameter, Hildebrand |
| (J/cm^3)^0.5              | Solubility parameter, Hildebrand |
| (J/m^3)^0.5               | Solubility parameter, Hildebrand |
| (kg/(s^2*m))^0.5          | Solubility parameter, Hildebrand |
| (MJ/m^3)^0.5              | Solubility parameter, Hildebrand |
| (mol/(h*ft^2))/(mol/ft^3) | Mass transfer coefficient, molar |

CONVERT Flip Units Clear All

1. **Value:** 수치 입력
2. **Unit:** 단위 직접 입력
3. **Select (Input, Output) Unit:** 제공 단위
4. **Unit Symbol:** 단위 이름 순으로 정렬
5. **Property:** 단위 특성 순으로 정렬

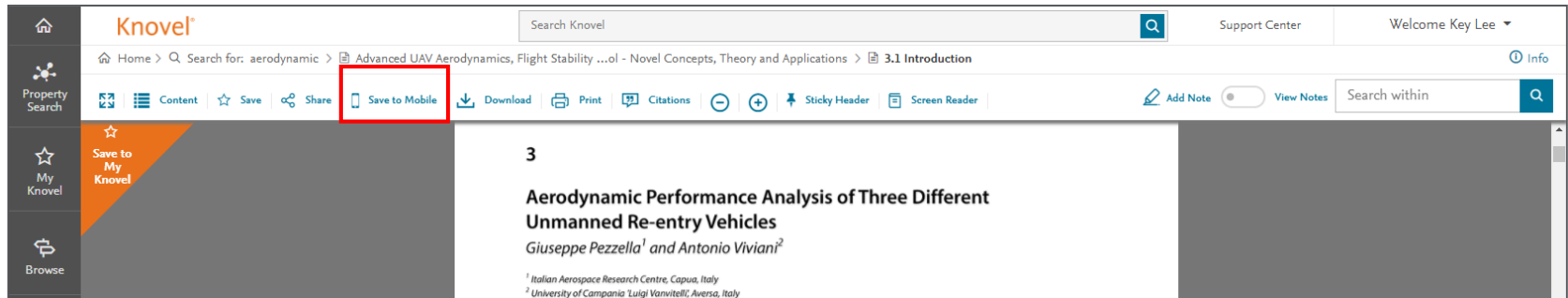
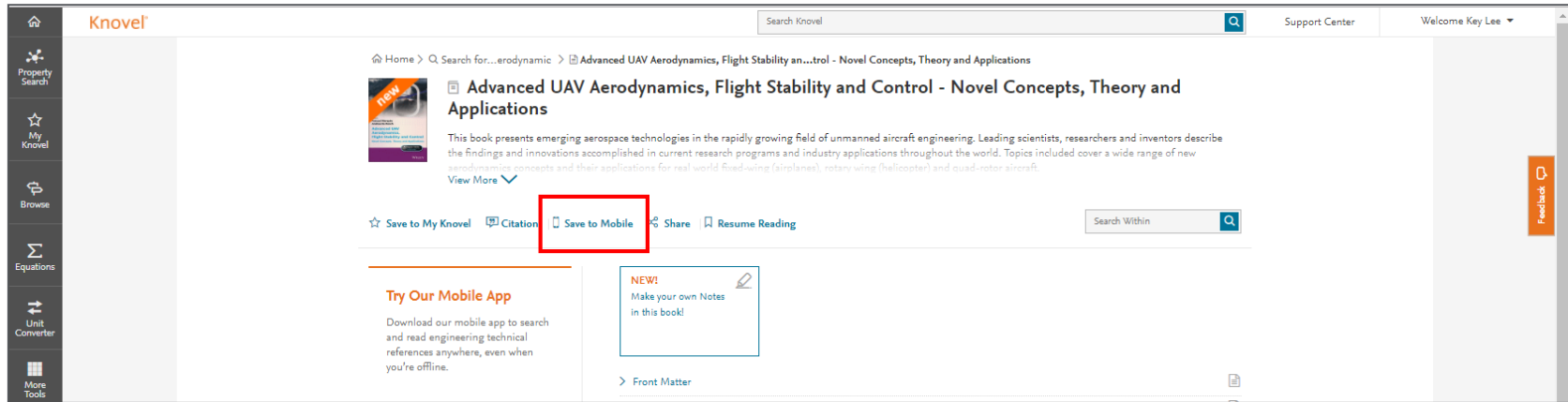


# My Knovel ToGo: 모바일용 e-book 플랫폼

- 연구자가 외부에서 Knovel의 서적을 읽을 수 있도록 **My Knovel ToGo** App을 개발
- 모바일 기기당 한 달에 **20권** 다운가능
- 보관기간은 **30일**
- Android, Apple 앱스토어에서 무료로 다운 가능함
- 이용을 위해서는 아이디 등록 필수

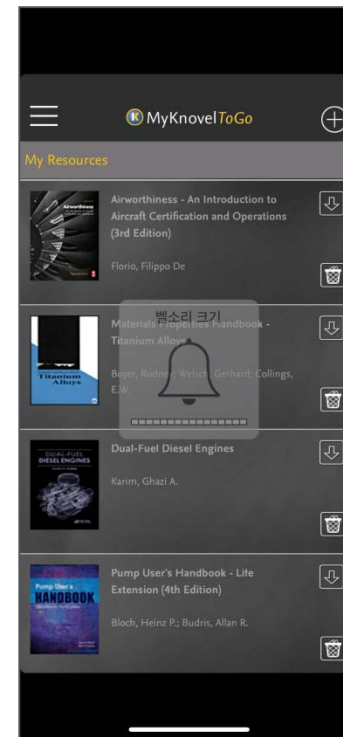
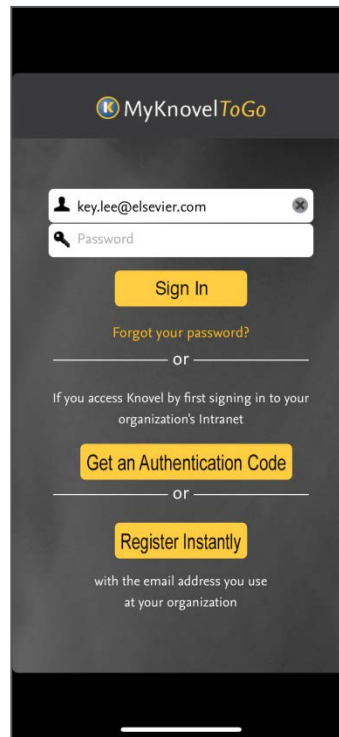
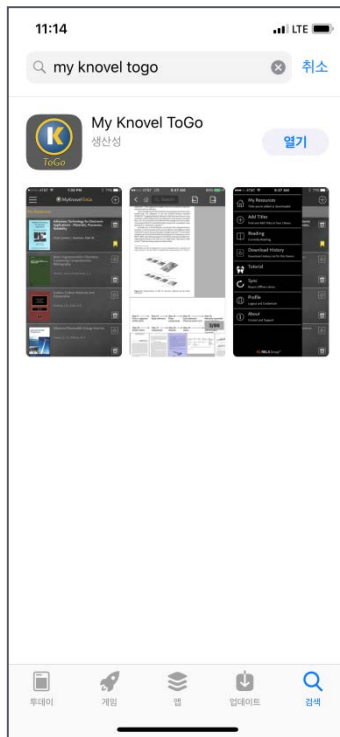


# My Knovel ToGo: 모바일용 e-book 플랫폼



1. 검색 결과 중 'Save to Mobile' 를 클릭하면 모바일 환경에서도 Knovel 내 서적을 활용할 수 있습니다.
2. My Knovel ToGo는 계정등록이 완료된 유저만 활용가능합니다.

# My Knovel ToGo: 모바일용 e-book 플랫폼



3. **My Knovel ToGo**를 Android, Apple 앱스토어에서 무료로 다운 받을 수 있습니다.

4. 다운받은 앱을 실행하면 두번째 화면이 나타납니다. 계정은 **본인의 등록계정**(예, [abc@add.re.kr](mailto:abc@add.re.kr)) 과 비밀번호를 이용하시면 활용가능합니다.

# Knovel®(노벨)

## 결론

- 140 여곳의 출판사 및 학회에서 제공받은 기술서적, 핸드북, 매뉴얼 및 가이드라인 (9,000 권 이상)에 대해 구독기간 동안 빠르고 쉽게 접근이 가능
- 업무에 필요한 직접적인 정보를 쉽고 빠르게 취득 가능
- 높은 가격의 기술자료를 적은 금액으로 활용할 수 있으며, 개정판 추가구매비용 감소
- 기술자료 구매에 필요한 행정적인 업무와 시간소요를 단축시킬 수 있음





ELSEVIER

# 감사합니다

Elsevier Engineering Team  
이기혁

